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Paper and Cellulose Industries.

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SEATTLE (4)

Miller Freeman.....President
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Lucile Ayers.....Assistant Editor
W. E. Crosby.....Forestry Editor

Publishing Office

71 Columbia St.....Tel. MA. 1626

NEW YORK (17)

Nard Jones.....Associate Editor
370 Lexington Ave. (120 East 41st St.)
Tel. Murray-Hill 3-9295

PORTLAND (4), ORE.

Chester A. Fee.....Associate Editor
534 S. W. 3rd Ave.
Tel. Beacon 6348

NEW ORLEANS (12)

Wm. J. Krebs.....Southern Editor
(400 Baronne Bldg.)
305 Baronne St.....Tel. Magnolia 4808

VANCOUVER, B. C.

Charles L. Shaw.....Canadian Editor
675 W. Hastings St.....Tel. Marine 1520

CHICAGO (37)

Daniel V. Bergman.....Regional Editor
6024 So. Woodlawn Ave. Hyde Park 10284

SAN FRANCISCO (5)

Stuart Leete.....Regional Editor
121 Second Street.....Tel. GA. 5887

LOS ANGELES (13)

Arthur Ponsford.....Regional Editor
124 W. Fourth St.....Tel. MUTual 8194

DENVER (2), COLO.

Karel Wegkamp.....Regional Editor
711 Colorado Bldg.....Tel. Keystone 6051

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A Basically Sound Industry

THIS industry is rapidly becoming recognized as one of the really basically sound industries of the world, with prospects for continuous substantial growth.

The United Nations has now officially taken cognizance of that fact. Here is what the Food and Agricultural Organization of the U.N. has to say about it:

"Between 1913 and 1943, world pulp production rose from 3 to 25 million metric tons; even the world depression did not interrupt this expansion for more than one year. . . .

"In addition to its use in paper, pulp has become a basic substance for textiles, plastics and structural materials. Most pulp is manufactured in modern factories, owned by large industrial concerns which take full advantage of scientific research and progress. . . .

"The pulp industry processes less than 10% of the world's annual wood supply. To achieve a proper balance in production of primary forest products, an expansion of pulp capacity might be desirable. . . .

"No progressive forest policy can be planned without active participation of the pulp industries. Potential importance of the pulp industry to improved forest management grows as advances in pulp chemistry permit use of almost any full length fiber, irrespective of species, defects and form of pulpwod."

World Planners

OF course, in keeping with the times, the F. A. O. or the U. N. O. wants to do the planning and thinking for others, who risk their investment. The F. A. O.'s technical committee thinks it ought to do four things:

1. Offer statistical information and other services now offered by private associations.
 2. Keep track of war effects, consumption trends, etc.
 3. Sponsor international research in waste wood, hardwoods and waste liquor utilization.
 4. Estimate long-range trends in wood supply and demand and advise governments, if requested, where and how much pulp industries should be expanded. It should also give advice on how to stimulate pulp consumption.
- That will relieve a lot of people in this industry of the need of thinking and planning. But what is going to create the dynamic vision and catalytic power of management for this world program, which is inherent in private enterprise?

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ST. REGIS TAKING OVER THREE MILLS FROM TIME, INC.

Negotiations are virtually closed for the sale by Time, Inc., of the three pulp and paper mills which it purchased in 1945.

St. Regis Paper Co. will be the new owner of these mills and they will continue to figure prominently as sources of supply for the greatly increased circulation of Time and Life magazines.

These mills, whose output totals 180,000 tons annually, are:

Maine Seaboard Paper Co., Bucksport, Maine.

Bryant Paper Co., Kalamazoo, Mich.

Hennepin Paper Co., Little Falls, Minn.

Tonnage of the three mills is to be sold almost entirely under commitments already made, including long term contracts with Time, Inc., for substantial quantities. After Time, Inc., bought these mills, Nick Wallace, vice president and production manager of that company, told PULP & PAPER INDUSTRY the postwar demand for Time and Life would approach a quarter of a million tons of coated paper annually. Of course, several big paper companies are now under contract with Time, Inc.

Mr. Wallace explained at the time of the purchase of these mills, that Time, Inc., preferred to buy paper from independent owners, but was "forced" to purchase mills outright last year because of the competitive situation prevailing at that time for coated paper and the necessity for Time and Life to assure ample paper for commitments made to advertisers for space.

The big Maine and Bryant mills, rated at over 300 tons a day, when

OUR COVER PICTURE—

● was taken after two attractive representatives of the "Deadlier Sex" had failed to fight their way out of a multi-wall paper bag with regulation boxing gloves.

The two young ladies in the picture, Dolores Dawson and Hilda Charles, tried, but failed, to win a \$250 prize on a radio show, that tidy sum being offered them if they had been able to break open the bag. But they were good sports about it.

They got into the giant kraft bag together but all they could do was knock themselves down. The announcer in the picture gave the audience a blow-by-blow account.

In other shows, Fireball Pitcher Bob Feller of Cleveland's Indians; a 225-pound strong man and a 200-pound Florida sponge diver also failed, individually, to break the bag, much to their surprise.

Aside from its size (8 ft. high), this bag was a standard multi-wall bag treated for strength according to methods developed in the paper industry during the war. It was made at Union Bag & Paper Corp., Savannah, Ga., with exactly the same paper pulp and chemicals which that company uses in making smaller size bags of high wet and dry strength for shipping fertilizers, beans, etc.

This radio show brought home to millions of Americans the importance of the multi-wall paper bag in modern economy. Perhaps, it made them understand why the expanding bag-making industries of this nation are still far short of meeting a tremendous peacetime demand for these high strength bags.

purchased by Time, Inc., which was newsprint in the case of Maine mill, have undergone extensive changes and improvements. Time has made a considerable investment at Kalamazoo, including machine improvements, power expansion, a coating plant and a unique Graphic Arts laboratory, described in an exclusive article in the January, 1946 issue of PULP & PAPER INDUSTRY.

When it bought, a short time later, the Hennepin mill, which had been making 50 tons daily of corrugating and specialties on a Fourdrinier, and also groundwood, the St. Regis Paper Co. simultaneously purchased the 100-tons-a-day Watab Paper Co., of Sartell, Minn. This also was for the principal purpose of supplying Time, Inc. St. Regis also has been operating the Maine Seaboard mill for Time, Inc.

Acquisition of the Maine Seaboard, Bryant and Hennepin mills by St. Regis practically doubles that company's production of book and converting papers. It has also been adding tremendously to its bag paper capacity by the recent acquisition of Florida Pulp & Paper Co. and interest in the new Alabama Pulp & Paper Co. And in the west, St. Regis is going to start paper production at its big Tacoma, Wash., kraft pulp mill.

Crown Zellerbach Corp. should have delivery around Jan. 1 of its new on-the-machine coating Beloit machine for West Linn, Ore., to start production for Time, Inc., western circulation, and the printing of these magazines in California will be greatly extended. Consolidated Water Power & Paper Co. has completed most of its extensive expansion, also Champion and International is making headway—all of these companies being important suppliers for Time, Inc.

Sam Orton Tours Pacific Coast for New Screen Plate

Samuel T. Orton, Jr., vice president and general manager of the Union Screen Plate Company, Fitchburg, Mass., completed a Pacific Coast tour in October in connection with his company's current announcement of its new stainless steel screen plate.

It was Mr. Orton's first visit to the pulp and paper mills of the Pacific Coast where his company has one of its most important markets. His tour of Coast mills was made with John M. Fulton and E. H. Tidland of the Pacific Coast Supply Company as "guides."

NEW FIGURES IN COAST industry (left to right):

B. B. SOUND, Purchasing Agent, Hawley Pulp & Paper Co., Oregon City; A. T. GARDNER, Assistant Paper Mill Supt., Crown Zellerbach Corp., West Linn, Ore., and JOHN L. HEYDON, Safety Engineer, Longview Fibre Co., Longview, Wash.

Mr. Sound, who has been with U. S. Treasury and later a stevedore company, succeeded the late K. G. Urfer. Mr. Gardner came from Provincial Paper Co., where he was superintendent five years, to assist in Crown's big new book paper program at West Linn. Previously he had been 15 years at Combined Locks Paper Co. in Wisconsin. Mr. Heydon, Texas-born, was promoted from job instruction foreman.



POWER OF THE PRESS!

Article in PULP & PAPER INDUSTRY Leads to International Agreement

A statement that many mill executives have made—that PULP & PAPER INDUSTRY is the “best read” magazine in this field—seemed borne out again with the news that an article that appeared in these pages many months ago has led to another international agreement for the exchange of papermaking equipment patents between Britain and the United States.

This time it was the amply illustrated and exclusive article which this magazine published in Dec. 1944 on the now famous Big Swede glassine paper machine and the pulp preparation and power-saving equipment serving that machine at Rhinelander Paper Co., Rhinelander, Wis.

One of PULP & PAPER INDUSTRY's subscribers in England, a bond paper mill executive in Lancashire, called the attention of a prominent Sheffield papermaking machinery manufacturer to the article. The machinery manufacturer wasn't able to get a copy because all copies of that issue were gobbled up in a very short time, but the Lancashire paper company official let him borrow his (that difficulty won't happen again because they both now have long term subscriptions!).

Ralph C. Heyes, director of Mills-paugh, Ltd., Vulcan Road, Sheffield (9), Eng., is the machinery manufacturer. Many things have happened since he had his attention drawn to that article. But it was a direct result of its publication that he made a flying trip over the Atlantic and all the way to the Pacific Northwest last month and on Oct. 9 signed an agreement with C. W. “Whit” Morden, of Portland, Ore., under which Mills-paugh, Ltd., has exclusive right to the manufacture and distribution of Morden Stock-Makers in Britain. These refining machines were among several kinds of equipment in use at Rhinelander which were described in detail in that article, all of them integrated in an improved and efficient process of glassine-making.

“It wasn't only my reading of that article that led to this trip,” Mr. Heyes told PULP & PAPER INDUSTRY. “Others had read about the Rhinelander developments in your magazine. Three executives of Hadfield,

Ltd., had previously made a trip to America, partly as a result of the publicity.

Only recently Hadfield, Ltd., of Sheffield, also paper machinery manufacturers, became the parent company of Mills-paugh, Ltd. J. T. Thomas, managing director of Hadfield, and now chairman of Mills-paugh, Ltd., A. Roebuck, works director of Hadfield and now a director of Mills-paugh; and Mr. Gibson, financial director of Hadfield and Mills-paugh director, came to Portland. There was a trans-Atlantic phone call in wee hours of the morning and Mr. Heyes was on the receiving end of the line.

But Mr. Heyes was able to say to his new confreres that he had already read the article in PULP & PAPER INDUSTRY and was making his plans to look intensively into the matter!

Mr. Heyes returned to England, sailing from New York on Oct. 25 on the maiden return trip of the new liner Queen Elizabeth. In the month of October he visited Beloit Iron Works, Beloit, Wis.; William Kennedy & Sons, Ltd., Owens Sound, Ontario, and other U. S. and Canadian manufacturing companies, as well as Mr. Morden. Beloit, incidentally, manufactured the Big Swede machine at Rhinelander.

Under present conditions British manufacturers can't sell any machinery in the U. S., but Mr. Heyes thinks the day may come when there may be more exchange of ideas and applications to the benefit of both countries.

He pointed out that his company owns the rights to a press section developed along novel lines, using a vacuum transfer of the paper sheet from the wire to felt on the paper machine, thus eliminating the draw of paper from wire to presses. Patents on suction rolls, stack presses and vacuum forming are properties of Mills-paugh, Ltd.

W. H. Mills-paugh, who has returned to his former home in Sandusky, O., and is now in his 70's, remains a director of Mills-paugh, Ltd., under the acquisition of his company by Hadfield, Ltd. He was en route to Britain on the Aquitania when the war broke out, so he stayed there doing a war job, mak-



BRITISHER — NEW ZEALANDER — CANADIAN, they are (left to right):

RALPH C. HEYES, Director of Mills-paugh, Ltd., now a division of Hadfield, Ltd., Vulcan Road, Sheffield (9), Eng., who made a quick flying trip coast-to-coast in the U. S. to look into possibilities of what would amount to exchanging of new papermaking machinery ideas between U. S. and Britain.

H. V. EVERTON, Director, Neill Cropper & Co., Ltd., Auckland, New Zealand, who flew to U. S. to try to procure paper and cardboard for his country. He flew to San Francisco in four days, including two Fridays over the International Date Line.

ROY EMERY, newly appointed Chief Engineer at Brompton Pulp & Paper Co.'s new kraft mill at Red Rock, Ont.

Mr. Emery was construction engineer for the new Lake Superior mill of Marathon Paper Mills of Canada.

ing propeller shaft and other equipment for big ships, to keep the “life line” open by sea between U. S. and Britain.

American Equipment Ordered in New Zealand

H. V. Everton, director, Neill Cropper & Co., Ltd., Auckland, N. Z., now touring the U. S. in the interest of procurement of all types of paper and cardboard to fill New Zealand requirements, told this magazine that New Zealand has only two producing plants.

One is a wrapping paper mill which operates on imported pulp; the other, a cardboard mill, started in 1939, which produces 14,000 tons of board per annum using groundwood made from imported Southern pine seedlings which grow so rapidly they can be cut at 12 years of age. Some imported kraft and sulfite pulps augment this supply to complete the grade desired.

As a result of forestry and other findings, a company known as New Zealand Forest Products, Ltd., has been organized to make an investment of \$12,500,000 in one multiple products plant, or several single mills to produce 20,000 tons of kraft pulp, 10,000 tons of kraft paper, 45 million feet of sawn timber, and 15 million multi-wall paper bags annually. A corrugated container plant is also planned to convert sufficient material to meet New Zealand, and some export requirements in “pinex” board. The whole is to be a progressive, rather than a unit, development to utilize increasing forest resources, but depends entirely on the U. S. loan to Great Britain.

As evidence of serious intent however, it is revealed that a Swedish gang saw mill, English corrugated container box plant machinery, and American equipment for a multi-wall bag plant are already on order.

INDUSTRY LOOKS TO ENGINEERS, MILWAUKEE MEETING IS TOLD

"If the paper industry is to successfully meet the inevitable competition that will come from light metals and plastics developments as substitutes for paper and pulp products there must be steady progress by the technical and engineering departments of our industry in bringing forward more modern methods, equipment and processes. We have the responsibility to see that our customers can continue to use paper products in large volume. To do this they must be able to buy our products at reasonable costs. We can not expect that either wages or the cost of our raw materials will go back to pre-war levels. So, we must look to you engineers for more efficiency in our mills."

W. Irving Osborne Jr., president of Cornell Wood Products Co., Hummel & Downing Co., and the National Paperboard Association, made

these remarks before the first annual meeting of the General Engineering Division of TAPPI in Milwaukee, Wis., October 2-4. And it was in the same serious vein that the four hundred engineers pursued their well-designed program of prepared papers, floor discussions and plant inspection during the three days.

All who attended were enthusiastic about the launching of this new Engineering Division meeting. A decision was made by the committee under Edward F. Burns, of International Paper Co., general chairman, to hold another meeting in the Fall of 1947 and to outline a plan for encouraging the division's eight section committees in their studies during the year.

Of significance was the fact that the engineering meeting brought together many men from the industry who have not heretofore attended

the technical sessions and who have not been members of TAPPI.

The Pfister Hotel served as headquarters and all sessions were held in the Junior Dining Room on the same floor as the Ball Room where the luncheons and one dinner were served. Marked interest was shown in the formal papers at the general session the first day and in the sessions of committees on mill maintenance and materials, steam and power and mill design and economic aspects and delegates entered wholeheartedly in discussions and contributed ideas and facts from personal experience.

At the first session, TAPPI President Gunnar W. E. Nicholson, vice-president of Union Bag & Paper Corp., envisioned benefits of the gathering and praised R. G. Macdonald, TAPPI secretary, for initiating and vitalizing the advance preparations. Mr. Nicholson spoke of responsibilities of men in engineering, their increasingly important role in successful plant management and operation.

The chairman of committees then outlined plans for carrying on the work of the Engineering Division. The committees and their chairmen are:

Mill Design and Economic Aspects: Milton Jacobs, Chas. T. Main, Inc., Boston; Materials Handling: George R. Wadleigh, consulting engineer, Hastings-on-Hudson, N. Y.; Steam and Power: John E. A. Warner, Robert Gair Company, New York; Mill Maintenance and Materials: Paul D. Corning, West Virginia Pulp and Paper Co., Mechanicsville, N. Y.; Drying and Ventilating: A. E. Montgomery, J. O. Ross Engineering Co., Chicago; Mill Instrument Control: R. W. Porter, Chem. & Met. Engineering, New York; Chemical Engineering: Ray P. Whitney, University of Maine, Orono, Maine; and Engineering Research: W. G. MacNaughton, News Print Service Bureau, New York.

Practically all of the committees had members in attendance at Milwaukee so that it was possible to hold brief organizational meetings and sharpen the objectives of the committee work that is to be carried on before the next Fall session. The enthusiasm of the chairmen augurs well for development of a sound program.

TAPPI's first All-Engineering Fall Meeting held in early October at Milwaukee has been acclaimed by several who attended as one of the best meetings TAPPI ever held. Side trips to important equipment manufacturing plants in the region were an attraction.

These men, who attended the Milwaukee meeting, are shown in the near-by Beloit Iron Works plant.

Left to right: G. W. CHARTERS, Asst. Resident Mgr., and L. D. McGLOTHLIN, Sulfate Mill Supt., both of Crown Zellerbach Corp., Camas, Wash., and C. E. "CAP" YOUNGCHILD, Consultant on Paper Machines and Papermaking, of Appleton, Wis.

They are smiling because they are looking at parts for the new (No. 14) facial tissue machine for the Camas mill, which, it was expected, would be installed before Jan. 1. Already the big Yankee drier for the machine has been delivered to Camas and foundations and bed plates have been completed.

Mr. Charters and Mr. McGlothlin also attended the TAPPI kraft industry meeting in New Orleans in mid-October.



Mill Maintenance

Wednesday's luncheon was followed by Paul Corning's session on maintenance and materials. The following program aroused much discussion:

Paper machine maintenance, by E. D. Beachler, Beloit Iron Works; Organization of maintenance by George H. Pringle, Mead Corp., Chillicothe; control system maintenance by Mr. Burns; kraft mill maintenance by William McIntosh, Union Bag & Paper Corp., Savannah; pump maintenance by F. R. Forrest and H. Kingsbury, Allis-Chalmers; and corrosion prevention by K. Chamberlain, Gates Engineering Co., Wilmington, Del.

From both these speakers and delegates who addressed the meeting from the floor there came evidence that the function of mill maintenance calls for organization of this department so that responsibility is properly fixed and the men in charge carry the confidence of top management.

It was advocated by Mr. Pringle and others that, in a large mill, maintenance should be under the direct supervision of the chief or plant engineer and that so far as possible maintenance personnel should be graduate engineers, with some machine shop experience.

Also suggested was the idea that maintenance supervisors should be well grounded in the handling of men.

Emphasis was placed on the need for management to realize the vital need for adequate maintenance and its relationship to lower operating costs. To this end management should find the means of impressing the operating department of the need for continuing cooperation, it was said.

Mr. McIntosh, of Union Bag, said maintenance in a kraft mill is fundamentally the same as in any other mill: the principal difference being in that materials are used which will withstand the alkaline liquors. He suggested that adequate water lubrication materially increases the life of wood conveyors; that corroded digesters can be built up by welding and the use of marking sticks that will indicate the temperature during the preheating operation; that stainless steel tubes have been installed in evaporators and have been found satisfactory, and that various alloys are useful and economical in blow valves, diffuser bottoms, pulp washers, pumps, valves, and piping.

K. P. Chamberlain of Gates Engineering, described three products used to prevent corrosion. Liquid



PARTICIPANTS in TAPPI's first All-Engineers Meeting, in Milwaukee, Oct. 2-4:

Top row (left to right): E. H. NEESE, President, Beloit Iron Works; GEORGE R. WADLEIGH, Consulting Engineer; W. IRVING OSBORNE, Jr., President of Cornell Wood Products Co.; ROBERT K. PRINCE, Engineer, Cellulose Industries, Allis-Chalmers Mfg. Co.; LOUIS VAN ARSDALE, Plant Engineer, Rayonier, Incorporated, Shelton, Wash.; JOHN HEMPHILL, Johns-Manville Co.

Middle group is General Committee for the

Milwaukee meeting. Standing (left to right): RICHARD W. PORTER, Chem. & Met.; A. E. MONTGOMERY, Ross Engineering Corp.; JOHN E. A. WARNER, Robert Gair Co.; MILTON JACOBS; GEORGE R. WADLEIGH, and PAUL B. CORNING. Seated: R. G. MACDONALD, TAPPI Sec'y; EDWIN F. BURNS and G. W. E. NICHOLSON, TAPPI President and Union Bag V.-P.

Below: New high density feeder in Allis-Chalmers Research Building is inspected by touring TAPPI delegates.

Neoprene is a material that handles almost all acids, alkalis, and many solvents at temperatures of from -58 to 250°F. It can be painted, flowed, rolled, or dipped to all irregular-shaped surfaces, giving a smooth coating, or can be applied in a sheet form, to such equipment as rectifier rolls, stock pumps, suction box covers, tanks, and head boxes. Nitrocote was developed to withstand the action of nitric acid, bleaches, and solvents. Durofilm is an air drying protective coating used to advantage on structural work and for lining concrete beaters and stock chests. He said a new development

in the rubber-lined pipe industry is a rubber-lined pipe joint.

Radio-Active Materials

Wednesday evening, Mr. Nicholson, chairmanned the one dinner meeting of the convention, highlighted by the address of John Wilson, physicist, Allis-Chalmers Mfg. Co., who gave an optimistic view of the possibilities of harnessing radio-active materials for industrial uses. Radio-active tracers already have been used in industrial chemical processes, he said.

Others who spoke were W. Irving Osborne, president of the National

Paperboard Association, Hummel & Downing Co., and Cornell Wood Products; William C. Johnson, vice president of Allis-Chalmers, and E. H. Neece, president of Beloit Iron Works.

Steam and Power

Thursday morning was given over to the committee on steam and power chairmanned by J. E. A. Warner, who himself discussed BTU accounting in the steam plant.

Arnold Urban told of experiences with a spreader stoker installation at Marathon Corp. in the Rothschild, Wis., "home" mill. He said that originally boilers were equipped with underfeed stokers but now all firing is done by overfeed stokers which are capable of burning most coals of characteristics from hard coal screenings and coke breeze to high or low volatile, high or low ash fusion point coals. Reclaimed sulfite waste liquor has also been burned on them.

In addition to closing up the condensate return system a continuous blowdown system was installed which resulted in cleaner boilers, drier steam, a saving on water treating chemicals, and a 2 to 2.5% saving on coal.

Fly ash is collected by an arrestor which is installed inside the chimney; there are no moving parts and no power is required. The ash is returned to the boilers and burned.

Mr. Urban said superchargers increased peak load rating from 240% of normal to about 290%, saved 3% on fuel, cut fly ash by half, and increased burning rate by area measure.

A supertherm system of steam generation was discussed by Steve Senka of Personal Products, Milltown, N. J., turbine installations by Hans Dahlstrand of Allis-Chalmers, economic and proper application of process steam and power by F. E. Laramore of Chicago.

Trip to Beloit

Everyone was looking forward to the trip to Beloit Thursday afternoon. A special train provided by Beloit Iron Works arrived in Beloit in mid-afternoon and delegates were guided in groups through the general offices, engineering departments and the large plant.

On all sides one found guides and workmen ready and anxious to show and explain all the work in progress on various paper machines. Buses were waiting and as the groups completed their tour of the plant they were taken to the Wagon Wheel Inn for dinner. Harry Moore, vice president of Beloit Iron Works, who



AT MILWAUKEE ENGINEERS meeting: Top (l. to r.): Vic Haner, Puget Sound Pulp & Timber Co., and Bill Goodwillie, Beloit Iron Works. Below (l. to r.): A. M. Schmalz, Thilmany Pulp & Paper Co., and "Stub" Johnson, Rhinelander Paper Co.

had planned the visit, must have worked long and hard, because the entire convention was served a delightful meal the piece de resistance being roast beef. And at a time when meat was so scarce and it occupied attention of the President of the United States and his cabinet members, that was something!

E. H. Neece, president of Beloit Iron Works, acted as host for a brief program following dinner. The delegates will not soon forget their visit to Beloit.

Mill Design

Back to work again on Friday morning, Milton Jacobs, chairman of the committee on mill design and economic aspects, introduced the following subjects and speakers: Power distribution by W. C. Bloomquist of General Electric; mill piping by O. P. Carter, of Boston; design trends by John Stadler of Montreal; economics of instrumentation by R. W. Porter; and application of chain conveyors by W. M. Huffnagel of Link-Belt.

Mr. Huffnagel said the pulp and paper mills probably use more types and sizes of chains than any other single industry. He listed various wood conveyors; slasher chains; barker chains; chains to chippers and grinders, chains from chippers; chain-driven beaters, chain driven paper machines and many power transmission applications. He recalled that the Ewart Detachable Chain of 1873 eliminated breaking of chains from shrinkage by operating over sprockets, and could not slip, and this invention grew into

the Link-Belt Co.

Mr. Bloomquist of G-E stressed sound engineering and economics in expansion of power distribution, an activity in which many pulp and paper mills are today actively engaged. He said the trend in system operation is towards a grounded system but this practice is relatively new in paper mills. The operating advantages with a grounded system was stressed and several methods of establishing a grounding source were shown by simple diagrams.

From a thermal efficiency standpoint, steel and reinforced concrete alone will not produce a cheap building in cold climates, therefore it is necessary to make further investigations to produce a cheap building for use in locations where moderate and low temperatures prevail, he said.

Thermodynamics and chemistry are most important factors in new mills and even existing ones will have to give more attention to that subject. He suggested that economies can be effected by carefully utilizing all heat possible to extract from waste water before it is discharged. He noted that very few measure all their effluent methodically and accurately and relate same to overall heat balance.

More Plant Trips

Friday noon's luncheon was the last general meeting as the afternoon was devoted to trips to Allis-Chalmers plant and A. O. Smith Corp. in Milwaukee. R. K. Prince of Allis-Chalmers and Henry A. Schmitz Jr. were the respective hosts. Most TAPPI members had hoped to see both plants but time allowed only for one tour. As on the trip to Beloit, delegates found themselves in capable and experienced hands and much of interest was seen. Although somewhat at a disadvantage by reason of the strike that for so long caused a slow-down in production, some two thousand men were working at Allis-Chalmers and visitors found the large factory in the pink of condition and as they said in "Sunday Order."

At A. O. Smith Corp. the visitors were amazed at the intricate processes and the speed of machines that almost automatically turn out automobile frames faster than anywhere else in the world. But it was in the heavy steel vessel department that the delegates saw manufacturing of pressure vessels, glass lined tanks and stainless sheets spot welded to carbon steel with applications to their industry.

SWENSON WASHERS AT UNION BAG TOPIC AT NEW ORLEANS MEETING

One of the most currently talked-of installations in the Southern sulfate field are the Swenson-Nyman multi-stage pulp washers at the Union Bag & Paper Corp. plant, Savannah, Ga. A technical paper on these washers was delivered at the TAPPI Fall meeting in New Orleans, Oct. 14-16, and they were also subject of detailed discussion at the Supts. TAPPI meeting at Gearhart, Ore.

For those who attended those meetings as well as others, we present on these pages a "layman's" description of these installations and our own photographs of the much-discussed equipment.

The Savannah plant, frequently alluded to as the largest integrated mill, had been washing its pulp in 40 diffusers set in five rings.

In stepping up its capacity and in order to improve its washing operation, the company erected an addition to the washer building to accommodate three rows of the new Swenson-Nyman units, of which two have been installed and brought into satisfactory operation. Each of these two rows of washers are designed for and handle 200 tons of pulp daily.

The installation includes foam towers, two 30x42, one 30x25, and three 15x25-foot flat bottom liquor storage tanks, two elevated cone bottom high density pulp storage tanks and one blow tank, all of which were provided by the Chicago Bridge & Iron Co.

The conical-bottomed blow tank rests on eight supports that are 12 feet high. The central cylindrical section is of 26-foot diameter to a height of 13 feet where it tapers to a surmounting 12-foot diameter cylinder. The bottom cone has a depth of 21 feet 3 inches, beneath which there is situated a speed reduction gear for the blow tank agitator and the Allis-Chalmers pump that sends the stock from blow tank to first washer vat.

The stock passes into the blow tank near the top. The steam discharges upward into the atmosphere while the liquor and stock pass to the bottom. At the bottom of the cone, liquor from the first washing stage is pumped in to dilute the stock.

The diluted stock is pumped up and in passing as a blanket over the first drum is washed on the near side by second stage liquor.

WHY UNION BAG WENT SOUTH —MR. CALDER EXPLAINS MOVE

An economic history of Union Bag & Paper Corp., recently written by Alexander Calder, president, gives an interesting insight into its important moves of recent years.

Its organization in 1869 as Union Paper Bag Machine Co. in Philadelphia is recalled and Mr. Calder writes frankly of its many difficult periods to the present time.

During the 1920's the company's competitive position was undermined because of the unfavorable location of its obsolete mills in the North. It was attempting to sell sulfite bags which cost more and were not as strong as the new southern kraft bags. Therefore, the company decided to scrap its sulfite pulp mills in New York State and purchase its kraft pulp from Scandinavia.

When the depression struck in 1932, the company had a contract for Scandinavian pulp at \$35 per ton, which made the cost of kraft bag paper \$65 per ton. The new low-cost paper mills in the South forced the price of kraft paper down to \$41 per ton delivered.

A strike at the Hudson Falls, N. Y., paper mills enabled the company to cancel the Scandinavian pulp contracts and to sign new contracts for southern pulp. Two new bag factories were built, one in Louisiana and one in Texas. Kraft paper was bought from southern mills in 1932 at less than half the manufacturing cost at Hudson Falls in 1931. In 1935 the company was in a position to finance a southern mill at Savannah, Ga., which was a great success from the start. The fourth machine was completed in 1942.

When the grocery bag business was drastically cut during the war, the company decided to go into the multi-wall bag business. The bag factories at Bogalusa, Los Angeles, and Chicago were closed down and all manufacturing was concentrated in the Savannah and Hudson Falls plants.

The greatest problem at present is the wood shortage, said Mr. Calder. The company is in an excellent financial condition, according to charts presented by Mr. Calder, indicating there is no danger of overexpansion for some years to come—first, because of the great demand and, second, because construction is not going to be very fast.

Articles describing the new paper machine and other improvements at Union Bag have been published in previous issues and on these pages of PULP & PAPER INDUSTRY.

Afterwards this liquor goes to the first stage tank for the blow tank dilution. On the far side of the drum, the pulp sheet is washed by third stage liquor and then drops into a repulper, where it is diluted by liquor from the third stage. The washing liquor passes to the second stage tank.

These operations are repeated on the second drum, with washing on the front and back by fourth and fifth stage liquor respectively. The pulp goes through a repulper, where it is diluted with fifth stage liquor, then over the third drum for a fifth stage washing with clear hot water.

Explanation of "Multi-Stage"

The term "multi-stage" washing refers to the principle of a totally closed counter flow system with more than one stage of washing on each cylinder. The Swenson-Nyman washers are designed for two stage washing on each cylinder, so that the installation of three drums in a line could provide from three to six stages. The Union Bag installation is being operated with five stages, providing two stages each on the first two cylinders and a single stage on the third and final cylinder.

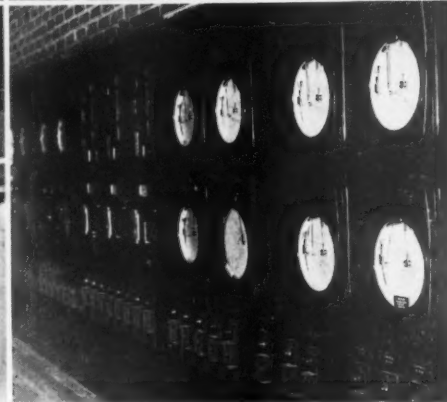
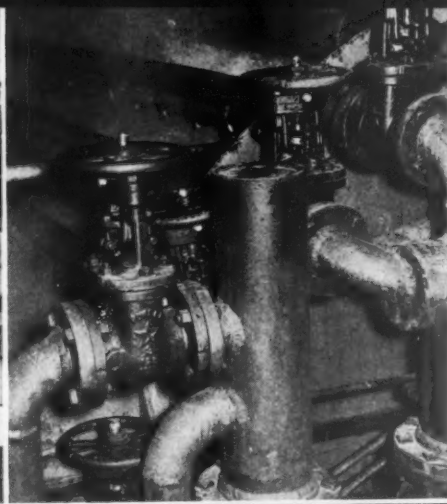
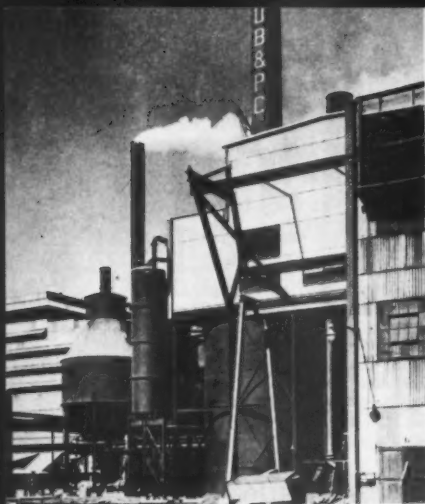
The Southeastern turpentine belt

from which Union Bag draws its raw material provides difficult grades of pulp to wash. In the initial operating period of eight days following completion of installation, a board grade, TAPPI permanganate No. 33, was washed with a drop in total solid content of liquor ranging from 2½% to 3%, which was equivalent to a dilution of 1.8 to 2.5 pounds of water per pound of air dried pulp.

Higher temperatures (up to 205 degrees) than in diffuser washing were experienced in strong liquor going to the evaporator, reflecting a steam saving. Chemical loss was kept at a satisfactory level.

In dividing the washing cycle into two stages (one for strong, the other for weak liquor), a distinction is created from previous methods requiring separate drums for each stage with intermediate pulping of stock. The sheet is not disturbed during the two stages of washing on the single drum. By separating the intermediate weak wash liquor, the wash water is twice used in true counter-current manner with attendant economy and effectiveness.

Thus, the amount of water required is reduced; washing efficiency is increased; and, dilution of



strong liquor is held to a minimum. The result is less water to evaporate and less chemical make-up. Floor space requirements are diminished.

Backwashing is eliminated by fast drainage into deep channels of each section. Full drainage over the entire length of the drum is accomplished by a system which gives uniform vacuum at all times. There is no roll-back from wash liquor or wash water. The drum deck is made of perforated stainless steel, welded into place.

The vacuum on each stage is independently controlled. Thus a high vacuum provided for the weak liquor sections results in a sheet up to 20% dry at point of discharge. The vacuum system is designed to permit application of different and variable degrees of vacuum on washing and drying sections of the drum so that the Swenson-Nyman washer, with its two separate valve compartments, actually functions as two drums but in a single cylinder. At Union Bag the three water-sealed vacuum pumps proved more than adequate.

An interesting feature of the Union Bag installation is the use of two cone bottomed vertical tanks for storage of high density stock. These resemble the conventional blow

tank, with vertical agitator in the bottom cone. The pumps discharge from the washers to storage at 20% to 24% consistency without additional dilution. Each tank has a 50 ton capacity. The consistency regulator on the bottom agitator sends the pulp to knotters and screens at about 2% consistency.

The enlargement of the pulp washing capacity at Union Bag was effected as part of a general program authorized by the company directors in 1945. Items in this program, in addition to the washers, have included a 200,000 (450 lb.) B&W boiler, a 7,500 KW General Electric turbo-generator, a Cottrell precipitator, a Pusey & Jones 236-inch Fourdrinier machine, and auxiliary facilities and buildings. The machine is to be completed early in 1947.

Ground was broken on Aug. 30 for a 160,000 square-foot area box factory.

The discussion of the pulp washing equipment was included in a symposium on sulfate pulp washing on Oct. 15, at New Orleans' Roosevelt Hotel, with Alfred Suter, general superintendent, Gaylord Container Corp., as moderator. M. Klein and F. S. McCall of Union Bag, were listed to give the paper.

SWENSON-NYMAN MULTI-STAGE WASHERS at Union Bag & Paper Corp., Savannah, Ga., were subject of discussion at Round Table which featured the big TAPPI New Orleans meeting Oct. 15 and also was a topic at Supts.-TAPPI meeting in Gearhart, Ore., a few months ago.

Here are pictures by PULP & PAPER INDUSTRY, bringing actual views of installations to the hundreds who attended those meetings and others who have heard of this new development.

Upper left: Exterior view of annex built to house washers at Savannah. At left is cone-bottomed blow tank fabricated and erected by Chicago Bridge & Iron Co.

Lower left: View of washer installation.

Upper right: Piping and valve connections for Swenson-Nyman washers.

Lower right: Foxboro control board for washers which records measurements of liquor flow to evaporator and hot water flow.

Newman of Crossett Dies After Illness

Ernest A. Newman, paper mill superintendent of Crossett Paper Mills, Crossett, Ark., died recently in a Shreveport, La., hospital. A native of Belfast, Ireland, the deceased was 50 years of age and had been in failing health for a period of months.

Mr. Newman was first vice chairman of the Southern Division, American Pulp and Paper Mill Superintendents' Association, and was slated to become the chairman of this division at the November meeting in Jacksonville. He was formerly in the newsprint mill industry in New York State.

Charbonnier Promoted At Union Bag

H. Y. Charbonnier, who was serving Union Bag & Paper Corp., Savannah, Ga., as superintendent of technical service, has become assistant technical director since J. R. Lientz, formerly with Swenson Evaporator, became technical service superintendent.

Newsprint Mill Plans

Progress in plans for a newsprint mill at Childersburg, Ala., was reported at a meeting in Biloxi, Miss., of the Southern Newspaper Publishers' Association.

Clarence B. Hanson, Jr., publisher of the Birmingham (Ala.) News-Age-Herald and SNPA newsprint chairman, said 100,000 acres of forest land had been acquired. The mill will have an annual capacity of 100,000 tons (see PULP & PAPER INDUSTRY, Feb. and April, 1946) and operate two machines. Completion will be in 1949.

New Wallboard Plant Being Built in Texas

Construction of a gypsum wallboard plant at Hockley, 35 miles from Houston, Texas, on U. S. Route No. 290, is being effected by the Gulf States Gypsum Co., of which E. J. Rhodes, of Houston, is treasurer.

Georgetown Mill Channel

Improvement of Winyah Bay and the Sampit river will bring deep water navigation benefits to the mill of the Southern Kraft Division, International Paper Co., at Georgetown, S. C. The project provides for dredging a channel 27 feet deep.

Nicholson Discusses Scandinavian Tour; Expects Paper Pulp Exports to Decline

At the three recent Fall meetings of TAPPI in the United States, G. W. E. Nicholson, president of U. S. TAPPI, brought greetings from Sweden's "TAPPI," whose summer meeting he attended while on the 1946 Scandinavian Research and Industry Tour.

One of 25 top executives representing 14 American industries, Mr. Nicholson, accompanied by Mrs. Nicholson, made a condensed study of scientific and engineering research and industrial planning in Denmark, Norway and Sweden. Invited through the Royal Academy of Engineering Sciences in Sweden and corresponding organizations in the other countries, the party was given opportunities to visit university and institute laboratories, as well as official and private research institutes and typical industries. Naturally, the vice president of Union Bag and Paper Co. gave special attention to the Scandinavian pulp and paper industry, and departed to some extent from the regular course of the tour to visit additional wood-using mills.

At Detroit and Milwaukee and New Orleans TAPPI meetings, Mr. Nicholson briefly outlined his trip. In an exclusive interview in Detroit he related other aspects of the journey for PULP & PAPER INDUSTRY readers:

"First of all," he said, "I cannot speak too highly of the welcome and hospitality which we received. Many of the Scandinavian industrial people are now coming to the U. S., and I am sure will receive the same cordiality here. It is plain to me that they want to build close and friendly relations between the U. S. and Scandinavia in the fields of research and industry."

Mr. Nicholson said that the shortage of coal and oil is still acute, so that Sweden's pulp and paper industry operates only at about 55 per cent of capacity. Even straw is used for fuel, and there have been developments in use of peat moss. Some coal is obtained from Poland, Belgium, England and the U. S., but not nearly enough; and no immediate relief is in sight.

While there has been some new paper production in Sweden, it is Mr. Nicholson's opinion that the amount of Swedish paper pulp that will be available for export is al-



G. W. E. NICHOLSON, President of TAPPI and Vice President in charge of Manufacturing of Union Bag & Paper Corp., was made an honorary member of the Swedish Cellulose and Paper Engineers Association, which corresponds to TAPPI over here.

He is the first American so honored; also only the fourth person outside of Sweden to receive the honor.

most certain to decline because of the trend toward manufacture of more high grade dissolving pulp and special grades of pulp for the world market.

"There is a noticeable indication of integration in the pulp and paper industry there," he said. "To this end manufacturing of artificial fibers in the Scandinavian countries is very significant."

Mr. Nicholson is of the opinion, however, that there is an opportunity at the moment to increase the shipments of pulp to this country through increased coal shipments to Sweden.

The strides made in the production of by-products in Sweden, such as talloil, turpentine, alcohol, proteins and organic compounds, have been amazing. The underlying impetus for this development, of course, being the fact that Sweden has been for so long shut off from her normal sources of supply of these products.

Equally interesting has been the progress made in manufacturing wood veneers and special paperboards and the combining of these products with wallboard for extensive use in building.

In modern techniques and appli-

cation of modern science, the TAPPI chief says, the Scandinavian countries are the equal of the U. S. and in certain respects are in advance of us.

"One of the things that struck me was the evidence in the mills that considerable study and planning was given to layouts, design and construction that provided the maximum of space; the streamlined flow of materials and the general adoption of automatic operations control equipment and devices. In all this the ultimate objective was for better working conditions, increased efficiencies and lessened cost of maintenance.

Labor Relations

Sweden's success in labor relations is well known, and Mr. Nicholson noted that it still obtains. The Scandinavian countries experienced their worst labor upheavals a quarter of a century ago, and now the "Bible" of labor relations is "The Basic Agreement between The Federation of Swedish Employers and the Confederation of Swedish Trade Unions."

There is the right to strike, Mr. Nicholson pointed out, but there are no closed shops and no seniority clauses.

"Labor negotiations are conducted on an industry-wide basis," he said, "and this appears extremely effective in developing a permanency in relations between labor and management."

Mr. Nicholson visited the Marina mill, several plants of Swedish Cellulose Co., Uddeholm Co. at Skoghall, a sulfate mill at Ostrand, a sulfite pulp mill and alcohol plant at Svartvik, the new Swedish Wood Products Research Institute and his alma mater, Chalmers Institute.

The Swedish "TAPPI" meeting which Mr. Nicholson attended with 300 others, was presided over by Dr. Ragnar Soderquist, general manager of Koarnsvedens newsprint mill of Stova Kopparbergs Bergslags Aktiebolag, one of the oldest organized companies, in existence for about 600 years. Mr. Nicholson was present at the dedication of a tablet to Gustav Ekman, first man to produce sulfite. The tablet was placed in the wall of the building in which the first sulfite was made.

Sweden Makes High Alpha Sulfite Pulp from Pine; Shortages Restrict Pulp Sales in World Market

Harry Andrews, technical director of Powell River Co., Powell River, B. C., returned recently with Howard Urquhart, special engineer, from a tour of the pulp and paper industries in Sweden and Finland, and he reports that these two countries are making slow progress on the road back to recovery after the war's disruption.

But Mr. Andrews says the Swedish and Finnish mills are going right ahead with research work and technological advances even though he discovered few signs of developments likely to throw a scare into the industry on this continent.

"We seem to have just about everything that Sweden has—and a few things Sweden hasn't got," says Mr. Andrews.

But he did mention an interesting new process being experimented with in Sweden for the production of high-alpha sulfite pulp by pre-hydrolysis from pine. In the past all pine pulp in Sweden has been produced by the sulfate process; spruce being required for sulfite.

Production of pulp in Sweden was down to about 65% of capacity at the time of Mr. Andrews' visit, as a result of continuing fuel shortage and other factors. Finland's capacity was about 35%.

Swedish mills are beginning to get some fuel oil, and business men appear to be getting some gasoline for their automobiles. The buses and trucks in Finland still using wood. There are still piles of wood to be seen in the cities of both countries—wood being used for household fuel that would otherwise have gone to the pulp mills.

Swedish operators told Mr. Andrews that price was one of the chief deterrents to export at this time, as they could not produce bleached pulp to sell profitably within the OPA ceiling.

They were being offered high prices in South America and other countries, but lack of fuel and shortage of labor in the woods made it impossible to capitalize on the situation.

Norway Pulp Situation Should Improve Slightly

The situation as to Norwegian pulp remains unchanged for the remainder of 1946, according to well informed sources in New York City importing circles, and the new cutting season has started off to

HARRY ANDREWS of Powell River Co.: "We have about everything Sweden has—and a few things Sweden hasn't got."



a degree that forecasts at least slightly better conditions for 1947. The matter of price has been purely an academic question insofar as the Norwegian mills are concerned since they have had no pulp to sell—but it is known that the price ceiling would bring in very little Norwegian pulp if it were available.

The Swedish situation appears to be more complicated than ever, due to the re-evaluation of the currency and the dissatisfaction over price ceilings. It is said that the trade agreement with Russia will not affect the Swedish pulp situation directly, although it may affect it indirectly due to the competition for labor by the industries which will be going full blast to meet the Russian requirements under the terms of the agreement.

As in the United States, labor is showing great reluctance to go into the woods,

CLAUS J. KOREN, Saugrugsforeningen, Halden, Norway, returned to his native country Oct. 19 after an extensive itinerary in the United States and Canada. "I am greatly impressed with the construction that has been going on, and which is in the blueprint stage," he said in the New York office of PULP & PAPER INDUSTRY. "I have also visited machinery people, as Saugrugsforeningen plans on equipment improvements.

Although not speaking officially, either for his own mill or for the Norwegian industry, Mr. Koren believed that Norway would experience continued difficulty in exporting pulp to the U. S. in quantity. Postwar Norwegians, Mr. Koren says, do not like to work in the woods.



and will accept other types of work in preference to woodlands operations. This situation appears to be worldwide.

Aggregate quantity of wood pulp imported from overseas sources from Jan. 4 through Sept. 5 amounted to only 426,997 short tons. Of this total, 357,738 tons were imported from Sweden as against 69,259 tons from Finland.

Inventories of pulp held in Sweden totaled 179,000 tons of sulfite and 125,000 tons of sulfate at the end of June.

Government Needs Less Than Rumored

Despite the fact that some government paper contractors have been sounded out on the proposal of a 25% to 35% "set aside" for government printing and use, it appears that a mere 5% to 10% will be ample for government needs—and that at least the leaders in the industry have already given an indication of willingness to contribute to that percentage on a voluntary basis.

This was determined from well-informed sources in Washington, D. C., in October by PULP & PAPER INDUSTRY. There seems no occasion for such alarm as has occurred from rumors of a 25% to 35% set aside.

V. L. Tipka, assistant chief of the Pulp and Paper Branch of CPA, said present activity of CPA was trending toward eventual elimination of that organization, insofar as pulp and paper is concerned.

New Mill in Maine Is Reported Planned

A new pulp and paper mill will be built at or near the site of the Van Buren-Madawaska Corp. lumber mill in Keegan, in northeast corner of Maine on the New Brunswick border, according to one of the principals in a recent sales transaction involving the lumber mill.

It was sold to Kenneth C. Irving of St. Johns, New Brunswick, and associates. James A. Gillies, of Bath, Me., former president of the corporation, said he understood the pulp and paper mill would be built by the new owners at or near the lumber mill. The lumber mill is the largest in the east, but may be replaced by a pulp-paper operation.

Ownerships Alter In Two Mid-West Mills

Ownerships in two mid-West mills have undergone changes.

The Milwaukee Journal has purchased an interest in Peavey Paper Mills of Ladysmith, Wis., and announced it would make newsprint. This mill has been making tissue (25 tons) and groundwood pulp (18 tons). Thus the state of Wisconsin again will produce a small amount of news; the last newsprint mill had changed to book recently with conversion of Wisconsin Pulp & Paper Co., now a unit of Consolidated Water Power & Paper Co.

Milprint, Inc., Milwaukee, manufacturer of packaging and printing materials, announced it has purchased Nicolet Paper Co., De Pere, Wis., a 20-ton-a-day glassine and greaseproof mill.

NEW ORLEANS MEETING GETS MILL DATA ON TURPENTINE

New Equipment Described in Pulp Washing Symposium

The first information of its kind gathered from Southern pulp and paper mills—their replies to a TAPPI questionnaire on yields and problems of sulfate turpentine by-product production—was revealed at the first big Fall Meeting of the alkaline and chemical products divisions of that organization in New Orleans, Oct. 14-15. Kraft mill men from all parts of the U. S. attended, with 205 registered, the great majority being mill men, both operators and technicians.

W. P. Lawrence, of Champion Paper & Fibre Co., who presented results of this questionnaire, said government figures show an increase from 40,000 barrels to 100,000 in an 8-year period and that over 75% of the producers gave information.

Chairman R. H. Stevens of National Container Corp., Jacksonville, chairman of TAPPI's chemical products committee, opened this group's program by stressing the increasing importance of turpentine as a by-product. He also explained treatment for inflamed eyes caused by turpentine vapors from evaporators.

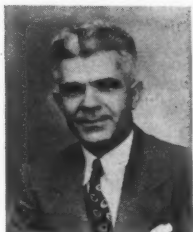
The second day at New Orleans' Hotel Roosevelt conclave was devoted to a symposium on sulfate pulp washing with Alfred Suter, Swissborn General Superintendent of the big Gaylord mill at Bogalusa, La., as chairman. His company gave a cocktail party on the eve of the convention and Gaylord's technical director, W. F. Gillespie, was general chairman of the entire show.

As for Mr. Lawrence's questionnaire to the Southern mills, it brought out these interesting facts:

Representative procedure is collection of turpentine vapors through separators of the cyclone type. Where there are two or more they may be either in parallel or in series. Condensers are of the straight tube type. Decanting may be in such installations or in storage tanks of decanter type. Water is carried over as vapor and condensed.

Longleaf and slash pine pulpwood yield 2.8 to 4.3 gallons per ton of air dry pulp; loblolly, shortleaf and Virginia pine yield 2.5 to 2.7 gallons per ton; Jack and white pine yield 1.5 to 3.1 gallons per ton.

Digester relief at less than 60 minutes during the cook is not conducive to maximum yield and there is no gain obtained in exercising relief before maximum



W. F. GILLESPIE, who General Chairmaned TAPPI kraft meeting in New Orleans. His company, Gaylord Container Corp., did much to make it a smashing success.

pressure is obtained. Peak yield is at about hour cooking relief intervals, perhaps 25 gallons. The yield during the second hour is 10 gallons; the third, 7 gallons. A desirable factor is obtained through use of automatic relief devices, to which there is a trend, as compared with hand relief, which requires a fine technique.

Orifices run from 1/2-inch to 4 inches, with most of them in the 1 1/2 to 2-inch range. The best orifice is not below 1 1/2 inches.

The location of separator is a matter of convenience and there is no safety factor involved. The separator will yield from 1 to 10 gals. per day per cu. ft. passed. The size of the separator is not related to emulsion problems. Two smaller units in series are better than one large separator. If one large non-insulated cyclone separator is used there may be condensation due to drop in temperature and coincident turpentine loss to the black liquor. Use of baffles is common, and general practice is for continuous discharge through a water seal. If the separator is operated intermittently by hand, vapor may be lost.

Condensers are about equally divided between horizontal and vertical; between water tube and vapor tube types. Condenser tubes are mostly 1 to 1 1/2 inches diameter by 5 to 10 feet long. Capacity runs from 1 to 5 sq. ft. per gal. of recovery yield. Cooling water runs from 300 to 700 gallons to the one gallon of turpentine recovered. The water is discharged in a range from 100 degrees to 150 degrees. Heat exchange ranges from 75,000 BTU to 175,000 BTU per gal. of turpentine. The turpentine temperature may run principally from 90 degrees upward with some as high as 150 degrees. There is no relation between turpentine temperature to yield corrosion. The water vapor carried over exceeds the theoretical for steam distillation. Ninety per cent of water vapor carried over will condense out before the turpentine vapor starts. Losses in condensing will be experienced from tubes being too small, or fouled.

Decanters commonly used are of 4-foot diameter by 8 feet high with a 2-inch turpentine take-off at the top and a 4-inch water outlet at the bottom.

Of the mills reporting, 19 had continuous operation of the unit. Capacity runs 5 gals. of turpentine per cu. ft. of decanter. The decanter size is not related to corrosion problems.

The relationship of vapor to turpentine recovery is: first hour, 50 to 1; 2nd hour, 2 to 1; 3rd hour, 9 to 1. Standard or average is 9 gallons of water to 1 gallon of turpentine recovered.

Emulsion is due to carry-over of black liquor and fiber and is controlled by greater care in relief.

Nineteen mills store turpentine above ground in mild steel tanks, largely horizontal type. Seven mills report corrosion above the level of the liquid in the tank, but this corrosion may be more general than indicated.

Based on the average tree of 10 to 11-inch diameter, six trees produce a unit of wood and 10,000 trees (a naval stores "crop") is equivalent to 2,000 cords. This will produce 1282 tons of pulp yielding 3 gallons per ton or 3,846 gallons of turpentine from the equivalent of a "crop." In naval stores operation, the gum yield over a 4 or 5-year period yields a crop of 1 gallon per tree. The pulp mill gets from one-third to two-fifths of this from the digester cook as a by-product.

More on Corrosion

Principal corrosion experience with tanks for storing of the pulp mill's turpentine yield is in the upper section, above the level of the liquid, according to a talk by S. G. Norton, Hercules Powder Co., Brunswick, Ga. Mr. Norton discussed tests made with storage tanks and in tank car shipments, various metal components being involved. The Brunswick plant stores turpentine for about 60 days before shipment.

Principal cause of corrosion is when heat of sun and cooling of night tending to distill and condense above the liquid level the saturate hydro sulfide. Light liquids of low pH and high corrosive action tend to accumulate at the top of the tank. Samples of various metals were suspended for testing of reaction.

Suggested methods of control, beyond container metal selection, included such things as painting exterior with reflecting paint and keeping the tank full by filling the bottom with water.

Discussion revealed that a "Wiggins" top with vapor seal produced by Chicago Bridge & Iron Co. for the oil industry's volatile hydrocarbons would serve if the installation is large enough to make this economical. This top rises and falls with the liquid and permits no space for gaseous formations.

Paul R. Wiley, West Virginia Pulp & Paper Co., produced some inter-

TAPPI Will Have 3 Fall Meetings Again in 1947--Schenectady or Pittsburgh - - Asheville Favored

The strong national character of each of the three TAPPI meetings held this Fall assure the continuance of diversification of these Fall sessions, tried for the first time this year, declared Gunnar W. A. Nicholson, of Union Bag & Paper Corp., president of the organization, in addressing the New Orleans Meeting on Oct. 15. After attending the two preceding meetings in Milwaukee and Detroit—both successful—Mr. Nicholson's conclusion was based on a New Orleans attendance of 205.

The great majority were mill men, operators as well as technicians, from one end of the United States to another, and from Canada.

"Next year," said Mr. Nicholson, "we will have better opportunity to spread the meetings out better."

Interest of authoritative company executives in the work of TAPPI assures the success of the organization, said Mr. Nicholson. He specifically mentioned Vertrees Young, executive vice president of Gaylord Container Corp., who served as banquet toastmaster where Mr. Nicholson spoke.

Coming sessions, for 1947, were indicated as Schenectady or Pittsburgh for the power and maintenance engineers; Asheville, N. C., for the kraft industry with Reuben Robertson, of Champion Paper & Fibre Company, as host; and a Midwest city for a general meeting.

esting tables on values of tall oil skimmings for from the soda and fuel viewpoint, both for inter-plant charge and credit, and for market evaluation. Occluded black liquor found in tall oil represents a loss to the mill and a nuisance to the buyer and with proper care may be reduced to a very small percentage, he said. Much value in sodium and fuel went to the sewers before the realization of such waste came to the mills.

In shipping tall oil at \$300 per tank car, many mills do not trouble to calculate values. If soda is \$23.00 per ton delivered to the mill then the residue in the skimmings may average a value of \$2.61 and if coal to the mill is \$5.00 per ton the skimmings fuel value may be \$2.85 and the combined total value of the skimmings to the mill may be about \$5.50 per ton.

Other Papers

A paper on "Nature of Extractives in Southern Pine" was introduced by title by Charles Carpenter and C. C. Porter, of Southland Paper Co., Lufkin, Texas.

Progress in establishing A. S. T.-M. standards for tall oil was reported by Paul R. Wiley for Arthur Pollack, also of West Virginia Pulp & Paper. Dr. Pollack is chairman of the ASTM sub-committee. Results of tests from 13 laboratories proved tentative physical standard test as satisfactory but difficulty was experienced in the test for saponification number, acid number, and rosin acid number. The laboratories

of interested mills were invited to participate in further tests.

Lime Kiln Losses

K. G. Chesley, research director, Crossett Industries, Crossett, Ark., presided at the afternoon sessions which opened with a paper on elimination of lime kiln losses prepared jointly by C. C. Porter and Fred Bishop, of Southland Paper Co., Lufkin, Texas, and Dr. John Liskow, American Air Filter Co., Louisville, Ky. Mr. Bishop read the paper, starting with losses of 100 to 150 pounds per ton, with resultant damage to electrical motors and nuisance to car owners from settling in the humid climate. Failure of a grinder's motor was traced to lime dust.

A test was made with a 50-gallon drum with baffles, forcing the stack through static water. This proved satisfactory and dust collector manufacturers were approached and a Type N Rotocloner was installed. This equipment was powered by a 125 H.P. motor and handles 43,000 cu. ft. per min. Corrosion was met by use of stainless steel impeller blades with the balance wrought iron. Lime loss for Jan.-June (1946) period was 156 lbs. per ton of pulp, and this dropped to 15 lbs. in August. The soda has been completely "buttoned up" with 1,375 tons of salt cake saved per year.

The washing water must be kept below boiling point, they said. At 160 degrees there is no lime in the over-flow but some calcium carbonate is found. The covered dust set-

ties, and is moved by a drag chain devised to move for 30 minutes and rest 30 minutes. The upward rate of water was originally figured 1/5th foot per minute, but the installation was changed to 1/10 foot per minute; this is below the settling rate. The installation is scheduled to pay for itself in one year.

Discussion of this topic was lively. J. N. Swartz, of Howard Smith Paper Mills, Cornwall, Ont., spoke of an Allis Chalmers installation with spray and loading chain that effected a saving of 80%. L. D. McGlothlin of Crown-Zellerbach, spoke of a "Thermax" installation of favorable operation.

T. Collins, of Thilmany Pulp & Paper Co., Kaukauna, Wis., described a new and inexpensive method for recovery of salt cake from recovery furnace stack gases. This has passed the pilot plant stage and a full scale installation will be made by one or two major builders of recovery furnaces. Power requirements have been placed at 1½ h.p. per ton of pulp for 89% to 90% recovery of fumes in the form of a saturated solution.

Drying and Refining

Results of tests of the effect of tension during drying on sheet strength were reported in a joint paper by J. E. Sapp and W. F. Gillespie, of Gaylord Container Corp., with the former making the presentation. Discussion of this paper was extensive. The point was made that slacking between sections is a questionable value and that tapering of rolls (i.e. making smaller dimension toward the end of the drying section) is not necessarily desirable.

Conclusions from 220 tests of jordan to determine refining procedure for stock for a new machine were reported in a paper presented by Mr. Gillespie, in which J. J. Goss, also of Gaylord, collaborated (see Page 43). Variables were taken in turn for testing, consistency being first. As consistency rises, power consumption decreases and capacity in tons rises. At 3½% consistency, power was at optimum (Miami jordan No. 2 with 375 freeness). This 3.5 was taken for standard for further work.

In testing power as a variable it was found that as horsepower decreases, the KW hour consumption increases and the capacity decreases. Conclusion: Use as much HP per ton as possible. Low HP requires a longer operating time. Churning of stock involves power,

and the big motor provides the "refining increment" left.

In testing through-foot variation, range of from 480 to 1580 gallons per minute with 395 KW of power was tried. Conclusion, to force too much stock is to reduce its refining capacity and increases power consumption. About 750 cu. ft. per min. at 3.5 consistency was found satisfactory.

It was found best to hold alum to a practical minimum as to avoid high power consumption.

In studying the comparative basis for jordans, i.e. high versus low linear bar contact and variable square inch of bar, the conclusion arrived at was if you want to cut stock, use small linear bar; if to increase Mullen, use more linear but this will take more power and lower through-foot.

Pulp Washing

The three objectives of sulfate pulp washing, according to Alfred Suter, general superintendent, Gaylord Container Corp., are (1) to separate liquor from fiber to further paper making; (2) to make the pulp making process economical by recovering chemicals; and, (3) to minimize stream pollution, a rising factor among sportsmen and residents along streams.

P. J. Hannan, Southern Advance Bag & Paper Co., Hodge, La., discussed experience with open diffusers, notably in contrast with closed type. These open types were installed 17 years ago because, in washing, a separately cooked short fiber hardwood packing on the perforated bottom of closed diffusers was experienced. Open tanks of 19-foot diameter, subsequently filled to 5½ feet, were substituted for 10-foot diameter, 20-foot high closed diffusers. Both pine and hardwood are now cooked and washed together.

The open diffuser results in washing in slightly over 4 hours while the closed runs two hours longer. There are certain disadvantages: (1) channeling, with slick spots in stock; (2) stock loss to effluent; (3) takes 15 to 20 minutes longer to dump; (4) there is a "soaking" period in the short travel without pressure in distinction against the closed diffuser.

In discussion, it was revealed that a hydrometer to 150 degrees F is used; solids to evaporator run 14 to 15%; that direct cooking is used; that bottoms of diffusers include (1) inch perforated steel plate, (2) wire next, and ⅛th inch perforated bottom. The blow lins discharges against a deflector plate; a fire hose



DR. CHAS. H. CARPENTER (left), Gen. Supt., and C. C. PORTER, Chief Chemist of Southland Paper Mills, Lufkin, Tex., the authors of paper on Southern Pine extractives presented at New Orleans TAPPI meeting.

leveling of pulp requires 3 or 4 minutes.

Robert R. Fuller, of Gulf States Paper Corp., was ill and therefore unable to discuss closed diffuser washing.

Washing with Screw Presses

Variation in designed productive capacity of the screw type pulp washer or dehydrator is accomplished by change in the pulley size, according to George W. Brumley, St. Mary Kraft Corp., St. Mary, Ga., who spoke of their installation. Mr. Brumley's paper was based on 5 years experience in a 125-ton capacity mill with wide permanganate number production.

The St. Mary's installation is of 3-press, 5-stage washing. The stock goes from blow tank to a rotary brown stock thickener and goes to the first press at 11% to 12% and comes out with dilution to 40%. The same consistency applies in turn for the 2nd and 3rd press. Water is admitted at the end of the 3rd press through a Johnson joint and concentric piping. This press has the 5th and 6th filtrate stage. Liquor from the 6th is passed to the 5th stage in the forward end of the press and 5th stage is passed to the back of the 2nd press. The 2nd press has the 3rd and 4th stage filtrate, with the 4th or last passing to the upper press end, and the 3rd to the 1st press. The 2nd filtrate goes to the blow tank and thickener and the 1st filtrate goes to the blow tank and thickener and the 1st filtrate is from the brown stock thickener and goes to the evaporators. The system is closed. The system includes three tanks.

When operated at designed speed, Press No. 1 is at 57 rpm, 38% to 40%, 255 soda pounds per ton in saltcake. The 2nd press operates at 54 RPM, 40% to 41%, 125 lbs. of saltcake per ton. The 3rd press, 54 RPM, 40% to 41% consistency, 50 lbs. saltcake per ton of pulp. Radius in the press ranges from 2¼" to 7½". Two men are needed for operation, one at the brown stock thickener; one on the press floor.

The TAPPI number of stock ranges from 27 to 32. The operator on the brown stock thickener watches for changes in hardness and drops a baffle to regulate. The salt cake figures are over-all. Mr. Brumley stated the plan runs about 144 tons per day, so operating conditions are above designed capacity, with resultant proportionately higher saltcake figures.

Mr. Suter then went on to talk about

tests made at Gaylord Container as to use of the rotary washer. Expansion of one of the oldest Southern mills brought questions in 1938 and more diffusers were added. In 1941, the rotary washer was looked into. First was tried the two stage washer on one drum in parallel, then two of these drums in series. Fresh water added, 85 gallons per minute at 6 tons (rated capacity 4 tons plus) at 16 to 17½% solid.

The object, said Mr. Suter was to bring the saltcake down to 50 pounds per ton or less, and to remain within evaporator capacity. An increased capacity of 300 tons was to be covered.

The ultimate result of tests was to have there two drum two stage drums in series under which condition alkali loss is reduced to 35 pounds or less. Washer drums are 9x12 feet. Fresh water is 2.8 pounds per pound of pulp.

Much Discussion

Discussion of pulp washing, under Chairman Suter's adept hand, ran over into the afternoon session, with Bruce Brooks, of Brown Paper Mill Co., West Monroe, La., and L. H. Gates, of Champion Paper & Fibre Co., Canton, N. C., contributing. Date was also forthcoming from Kimberly-Clark representatives. Mr. Gates gave a brief description of a 10-minute test for pulp.

Special interest was attached to the report of R. C. Richter National Container Corp., Jacksonville, Fla., who spoke on "an approach to a critical study of pulp washing" because at that plant there is an early installation of the Jonsson screen. Mr. Richer emphasized the truism that the cleanliness of the pulp follows the strength of the solution at last washing. The plant has IMPCO washers with barometric leg. Here, the screen rejects are returned to pulping via the chip bin. Samples are taken before the vat and before the pulp leaves the washer. The consistency checks made in advance determine the location for sample taking. The average of 262 air dry pulp at 40.5 pounds per ton, runs 85 gallons of water at 144 degrees. Dilution is 1.7 pounds of water per pound of pulp. The drop in pH involves the water treatment of mill water. Supply is at 9½ and the pulp drops from 11 to 10.

The new multi-stage washers at Union Bag were described by M. Klein in a paper to which F. S. McCall and J. R. Lientz contributed. (See page 29.) This is a new 3-drum, multi-stage rotary washer. Mr. Klein cited a number of tests showing washing results. The washers are in two series of three drums each. Each series is designed to take care of 200 tons per day, or 400 tons for the entire installation.

At 376 tons of 29 hardness, 2.2 dilution the soda ran 41 to 42 at 415 tons, Tappi 34, highest delivery was 2.5 lbs. dilution and soda was 43. In a range of experiments, lowest dilution was 0.9 and soda 54. At 31 Tappi, 1.7 dilution factor, soda was 41.

Delegates to the meeting spent October 16 in a trip to the Gaylord Container Corp. mill at Bogalusa, La. The company was host for the bus trip to and from Bogalusa and for luncheon there.



IN PRESENCE OF SUCH GLAMOR, is it any wonder Colonel John A. Farley, of Industrial and Public Relations Dept., Crown Zellerbach Corp., has been caught by camera with his eyes seemingly closed?

This picture was taken at picnic of Portland, Ore., staff of Crown Z, which was held near Mount Hood. With Col. Farley officiating as "Prince Charming," Barbara Byrne (left) was crowned as Paper Queen. Miss Byrne is the receptionist in the Portland office, 14th floor of Public Service Bldg., and therefore well known to many visitors there.



Roy F. Johnson

ROY W. JOHNSON, (right) returned from service to be elected Vice Pres. and Director of Republic Supply Co. of Calif. He is in charge of Oakland Division.

Teren Returns From Sweden Tour

Nils G. Teren, vice president and manager of both the Columbia River Paper Mills and Oregon Pulp & Paper Co., spent nearly two months this past summer in his native Sweden. Among major places visited were Gothenburg, Stockholm, and Hallstävik.

One stop of great importance to him was made at the Papyrus Paper Co., a 12-paper-machine mill, where Mr. Teren put in his apprenticeship period and learned the paper mill business as an employee. At Hallstävik he studied the waste sulfite liquor disposal system of that plant.

Ray Smythe's Son Gets Quick Trip From Korea

Sgt. Robert H. Smythe, U. S. Army, son of Ray Smythe, who is representative for Rice, Barton Corp., Heppenstall Co. and other manufacturers in the Pacific Northwest, had a recent short visit in Seattle on a "quickie" trip from Korea.

Brooks-Scanlon Merges Florida and Oregon Firms

The Brooks-Scanlon Corp. of Foley, Florida, and the Brooks-Scanlon Lumber Co., Inc. of Bend, Oregon, have effected a merger, and will be known hereafter as Brooks-Scanlon, Inc., with Foley and Bend Divisions, according to word received by PULP & PAPER INDUSTRY from M. J. Foley, president.

The personnel and management at each plant will continue the same and no change in methods of sales or purchasing are contemplated.

Proper addresses will be Brooks-Scanlon, Inc., Foley, Fla., or Brooks-Scanlon, Inc., Bend, Ore.

Vern Tipka Becomes Specialist for CPA

Vernon L. Tipka, formerly mill manager for North American Pulp & Paper Corp. at Cheboygan, Mich., and prior to his service in the armed forces as a First Lieut., Quartermaster Corps, technical director with Hawley Pulp & Paper Co., Oregon City, Ore., has returned to government service as industrial specialist, Paper and Paperboard Branch, Forest Products Division, Civilian Production Administration, Washington, D. C.

Air Service to Manila

Pan American World Airways has resumed its trans-Pacific flights to Manila (fare \$726 from San Francisco; to Honolulu, \$195).

Spruce-Hemlock Plots Grow Fast in Oregon

A 94-year-old spruce hemlock forest on the Pacific Coast Range of Oregon made a net growth of 17,523 board feet (equivalent to about 35 cords) in the last 11 seasons, according to measurements of the Pacific Northwest Forest Experiment Station. Measurements were of sample plots on the Cascade Head Experimental Forest (between Otis and Neskowin, Ore.)

This forest, now 94 years old, has been making on the average a net annual growth per acre of 247 cubic feet or 1,454 bd. ft. (Scribner rule in trees 12 inches and over to an 8-inch top). The forest started in ashes of the great Nestucca burn of the late 1840's or early 1850's, and has since been spared any recurring fire.

One plot (mostly spruce) has the prodigious present volume of 168,291 bd. ft. per acre. This is gross scale, of course, with no allowance for defect or breakage. This means an average annual growth for this plot during its 94 years of 1,790 bd. ft. Another plot has had such heavy mortality by overcrowding, wind-fall, etc., that it has made very little net growth in the 11 years, and so pulls down the average.

Assistant Named For Vice President Heron

Kenneth I. Taylor, of Boston, Mass., has joined Crown Zellerbach Corp. as assistant to Vice President Alexander R. Heron, who is in charge of industrial and public relations.

Prior to World War II, Mr. Taylor served five years as secretary-treasurer and legislative agent for the Massachusetts State Federation of Labor. Prior to that he served on the Massachusetts State Labor Commission. He is a member of the typographical union.

Mr. Taylor was retired as lieutenant commander in the naval reserve after 40 months in Industrial Incentive Division of the Navy. He conducted the famous Sullivans, parents who lost five sons in service.

Visits Camas

Fred A. Olmsted and R. O. Hunt, assistants to Vice President Albert Bankus in San Francisco, and John N. Mulkey, assistant controller, recently made visits to the Camas, Wash., mill of Crown Zellerbach Corp.

Carl Braun Takes California Vacation

Carl E. Braun, vice president and mill manager, Hawley Pulp & Paper Co., Oregon City, Ore., spent the weeks of Sept. 22 to Oct. 6 on vacation at various points in California, including visits to San Francisco, Los Angeles and San Diego.

Safety Conference Idea Put Into Practice

First Aid classes to be carried on by the American Red Cross are being held at Hawley Pulp & Paper Co., Oregon City, Ore.

The move is in keeping with some of the suggestions presented during the recent Pacific Coast conferences between labor and management on a safety program. The company expects to enroll all foremen, all shop stewards, and as many other men as can be persuaded to take the course.

Texas Gulf Man Dies

Charles N. McNulty of the staff of Texas Gulf Sulphur Co., died Sept. 6 in a Long Island Hospital.

Joins Crown Z

George Schroeder, lately with Western Pine Association, is now in charge of fire control on all tree farms of Crown Zellerbach Corp. in the Columbia River District. Mr. Schroeder has offices with the forestry department, Crown Zellerbach Corp., Public Service Building, Portland, Ore.

Mrs. Ekholm Sets Record

Mrs. Erik Ekholm, wife of the general superintendent of Puget Sound Pulp & Timber Co., has set a new women's record for golf at the Bellingham (Wash.) Country Club course. In mid-September Mrs. Ekholm equalled the course record of 75, and one week later she bettered it by one stroke.

New Board Member

The election of King Wilkin, sales manager, L. J. Doherty, Sacramento manager, and Thomas McLaren, vice president of Crown Zellerbach Corp., to the board of directors of Zellerbach Paper Co. is announced by Harold L. Zellerbach, president. Louis A. Colton and Frank C. Stratford resigned from the board.

THRIFT VERSUS DRIFT IN FOREST PRACTICE

By Reuben B. Robertson

President, American Paper & Pulp Association,
and President, Champion Paper & Fibre Co.

Following are main sections of the address given by Mr. Robertson as principal banquet speaker at the TAPPI Fall Meeting held in Detroit Sept. 26-28.

Mr. Robertson discusses the trends in better forestry practice and wood utilization, particularly as they are being developed in the South. But most of his suggestions are practical in all the pulp-making and pulpwood production areas of North America.

The conclusion of his address dealt with inflationary trends and Communism.

Our last issue carried a comprehensive summary of all principal talks made at Detroit.

Today with steadily diminishing stands of timber and steadily increasing price competition from other needed forest products, the users of pulpwood are properly becoming increasingly cost and method-conscious.

Pulp mill operators are beginning to appreciate in greater degree the sometimes forgotten fact that they have important enemies in the competition for timber, in the non-users as well as the users. Forest fire and decay are in this sense competing non-users. No good comes from their ravages of the forest.

Abundant emphasis has been given over the years to the losses which result from forest fires. Progress in prevention is being made.

I am confident, however, that pulpwood users generally do not fully appreciate how much of the potential supply of forest products is lost through the non-productive processes of decay. It is well known that thrifty cutting of the forest must be timed cutting.

We lose in productive capacity, if we cut excessively in an immature forest. Our losses are correspondingly great if we defer cutting in a mature forest too long and so allow annual decay to exceed annual growth. Like field crops, the forests have their time when they are ripe for harvest and there is an economy of timeliness.

We laymen have not fully appreciated that the young thrifty forest which is steadily increasing its inventory of growing stock, still presents a decay problem of considerable



THESE PICTURES WERE TAKEN BY PULP & PAPER INDUSTRY at the TAPPI General Fall Meeting in Detroit. A comprehensive report was published in our last issue on all important highlights of that meeting.

Top (left to right): G. W. E. NICHOLSON, President of TAPPI and Vice Pres. in charge of Mfg'ing, Union Bag & Paper Corp.; REUBEN B. ROBERTSON, Sr., President of APPA and President of Champion; WORTHEN E. BRAUN, General Supt., Pejepecot Paper Co., Brunswick, Me.; and RUTH SHALLCROSS, Institute of Paper Chemistry, Appleton, Wis. Dr. Shallcross predicted a need for 26 million cords of pulpwood for U. S. mills if pulp imports continue downward. Her speech analyzed economic prospects. Mr. Nicholson opened the sessions and Mr. Robertson was banquet speaker. Principal portion of his speech appears on this page.

Lower row (l. to r.): WARD PITKIN, Oliver United Filters; GEORGE B. AMIDON, Chief Forester, Minnesota & Ontario Paper Co.; JERRY STRASSER, Vice Pres., Stein, Hall & Co., and FRED P. HEIL, Lockport Felt Co.

able importance.

Foresters tell me that in pine forests where the stand is fully stocked in natural reproduction, it is not at all unusual to have 2,000 stems to the acre and in many instances there are 3,000 per acre. From such stands they tell me that only 500 stems per acre will ever be harvested, if pulpwood is the objective, and only 100 stems per acre if saw logs are the objective.

In good seed years, nature plants with a lavish hand and provides a bountiful factor of safety for ultimate survival of the forest. Decay accounts for the lost 1,500 stems per acre that have disappeared between the youth and maturity of the forest stand.

Forest "Runs"

The growing forest, like a litter of pigs, has its "runs" of low vitality as well as its individuals of high vitality. They seldom reach equal strength because the stronger pushes the weaker aside at feeding time. Unless artificial aids are pro-

vided the runts wither and die.

Occasionally, it has been found practical to conduct thinning operations before decay of the forest "runs" has taken its toll, but such instances form the exception rather than the rule. Pulp mill operators generally have, in the past, made little use of this potential resource, because of practical considerations of costs and methods. Few folks will use skimmed milk when whole milk or cream are available in abundant supply.

Obviously, it will cost more in labor to cut, log, load and transport from the woods a multitude of small sticks than it will to apply these same processes to half the number of larger pieces, at least as long as conventional methods are used.

Furthermore the penalties for handling a multitude of small sticks are not confined to the operations in the woods, but extend throughout the processes of unloading, storing, barking and chipping at the wood room of the pulp mill. It is evident that for adequate utilization of this



PARTICIPANTS IN DETROIT TAPPI Meeting:

Top (left to right): HARRY F. LEWIS, Institute of Paper Chemistry, who was Program Chairman; J. P. PARSONS, Hollingsworth & Whitney Co.; B. E. CLARIDGE, Hammermill Paper Co., and D. T. JACKSON, Hammermill Paper Co.

Problems of wood supply, available wood resources and closer wood utilization were key topics at Detroit. Below (left to right) were some who discussed these problems:

E. L. DEMMON, Director, Lake States Forest Experiment Station, who praised Nekoosa-Edwards forest policies;

MILTON O. SCHUR, Tech. Director, Ecusta Paper Corp. and formerly Brown Co., who chaired pulp species session;

J. W. McNUTT, Kimberly-Clark Corp., who reported trend toward "packaging" in woods; JAMES W. CRUICKSHANK, Southeast Forest Experiment Station, who noted South's important stake in small ownerships;

C. E. KNAPP, Southern Pulpwood Conservation Assn., who reported 6,000 bicycle type portable saws in use in South, and

K. S. TROWBRIDGE, American Pulpwood Assn. and session chairman, who said other areas can learn from Far West.

small timber, new methods and new techniques will be required all the way down the line. New competitions for timber volume, due to the war and to governmental regulations designed to encourage greatest production of the materials for which greatest need exists, have changed relative stumpage values and relative labor costs as well.

Stumpage that is non-competitive with any established demand, should be considered as a potential raw material supply even though the cost of getting it out is higher than the operator is normally accustomed to. Low stumpage value can at least, in some degree, neutralize higher labor cost.

As in other commercial activities, there is an optimum balance and a practical dividing line between increased labor cost and decreased material cost and the placement of that line will vary from time to time and between localities.

That line, however, can be pushed

much further toward more complete utilization if new and more scientifically designed methods can be devised to meet changed conditions.

Handling of sticks as small as two inches in diameter, tree length, or log length transportation; mechanical loading, and special truck and railroad car bodies, are all subjects that warrant careful study.

Losses in Barking

At present, excessive losses occur in removing the bark in the barking drums, due to wide spacing of the channels in the drums, as usually installed.

Experiments with narrow spacing of channels are being made with rather promising results. However, with improved methods of freeing the liquid pulp from fragments of bark and similar impurities through better screening, better riffing, better bleaching, etc., many more liberties can be taken with the initial

wood preparation than was formally the case.

Experimental runs also indicate that substantial percentages of thin-barked, small diameter pulpwood can be satisfactorily used without any bark removal whatever.

Forest "Crumbs"

I believe the pulp manufacturer of the future is going to have to content himself with increasing percentages of the "crumbs" from the forest table instead of the full loaf and furthermore that he will learn to like it. He will also have the satisfaction of knowing that he is helping to protect one of our greatest national resources.

He will have to use the research technician and the technically-trained operator to a far greater extent than ever before. He will have to adjust himself to the scattering of his wood gathering activities over a far larger acreage than has been customary in the past, because the percentage of total stand allocated to him by the new economic balances is likely to be far less than in earlier years.

In exploiting our natural resources, we have been prone to rely on a marriage of resource and brawn with resultant relatively low wage and low living standard for the workers. In the future, we will rely to a greater extent on the marriage of resource and brain. In that way we will probably attract operators of higher skill and can afford higher living standards.

Those, who, some years ago, confidently assured the investing public that pulpwood could be delivered at the Southern mills for generations to come at prices ranging from \$3.50 to \$5.00 per cord, performed a disservice to the South.

It never was, and never could be, possible to make deliveries at such prices, without anchoring to sub-standard living conditions. I sincerely hope that such prices, and the talk of such prices, have gone, never to return.

Overemphasis on low costs and on rapidity of growth have resulted in bringing into the South more pulpwood consumers than it is now ready to support on a sustained yield basis.

As one travels over the forested areas by airplane one is impressed with the apparently limitless scope of the forests. Closer examination from the ground, however; a study of ownership, and an investigation of stumpage prices, should remind the prospective pulpwood user that there is often a vast difference be-

tween what seems to be, and what is actually, available for use.

Protection against overdevelopment of wood-using industries in given areas, is something greatly needed not only for those already established, but also for those who plan to build.

Inflation and Communism

No matter what field of activity absorbs our work-a-day interest, we cannot escape the impact of forces unleashed by the war. We can no longer expect to be entirely free from the penalties of inflation. The disease is already established and in my opinion it is now only a question of "how much" and "how long." We are already dealing with fictitious dollars.

When some of my friends witness the ever-present inflationary trends, the uncontrolled and willful power of organized labor, the economic confusion occasioned by political incompetency, they are prone to say: "Oh, what's the use?" or "there's a storm coming, let's just batten down the hatches and ride it out." This is a very natural reaction of an individual to cumulative forces beyond his control, but it's a reaction that is more likely to aggravate than to alleviate the troubles of the day. It is the attitude of defeatism.

Most of us recognize, I believe, that the Communist cook has his spoon in many of the economic pots that are boiling today and that he seeks every opportunity to make them boil over.

By "battening down our hatches" and "riding out the storm," we would be doing the very thing the Communist would like to have us do. They thrive on confusion and chaotic inertia; are ready and eager to take full advantage of every such situation.

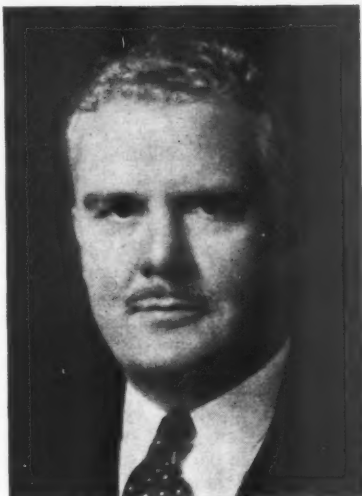
Private enterprise and the American way of life are at stake in a far more serious way than the average Joe Doak realizes. Only a militantly vigorous and constructive policy carried out by every businessman will guard us against the ugly head of Communism.

Detroit Speaker Was Under Great Strain

When Dr. Ruth Shallcross, Institute of Paper Chemistry, Appleton, Wis., delivered her masterful paper on pulpwood economics at the Detroit TAPPI meeting in September, few in the audience realized she was under more than "speaker's strain."

She had received news that her young son had been injured by an automobile. His recovery has been swift and complete, according to word from Appleton.

Paper Export Advocates Present Their Case



J. FRANCIS STRUB, U. S. PAPER EXPORTERS COUNCIL: "To hold foreign markets, flow of exports can't be turned off and on like a faucet."

Despite the current domestic demand for paper, a meeting of paper manufacturers and exporters in New York recently were warned in an address by J. Francis Strub, vice president of the U. S. Paper Exporters Council, that the industry may again experience an era of over production, such as existed for more than 20 years before the war "when many of the paper mills whose sales were restricted to the home market, operated at between 58% and 80% of capacity, a rate barely sufficient to carry overhead costs."

The manufacturers were reminded of warning signals that may suddenly bring about a buyers' market and were asked whether those who forecast a home market need for domestic made papers of 24 million tons annually, could guarantee a dynamic economy that would without interruption support such a demand.

Mr. Strub said that, insofar as exports were concerned, conditions today differed from those following World War I. He said, that owing to greater industrialization abroad and rapid advancement in literacy standards the world's demand for paper would continue far into the future and that the market was available to American manufacturers, if they would regard the foreign markets as coming "within their natural sphere of trading." To gain and hold this market, which some day may be the difference between profit and loss for some mills, "a steady flow of exports must be maintained," he said. "As is true in your domestic business, it is no more possible in the export field to turn this on and off as with a faucet."

T. D. O'Keefe, director of the Department of Commerce's commodities branch, in encouragement of an export program, asserted that a statistical review revealed that the industry's "perennial

problem has been development of markets."

"Without doubt the paper industry is an outstanding factor in American import trade and there is no valid reason why it cannot be as important an element in American export trade," he said.

He explained that demands for paper and paper products in many foreign countries have increased "far above pre-war levels. Purchasing power in these countries has risen, as it has in the United States," he continued, asserting that "paper consumption follows purchasing power."

He further stated that when manufacturers are not willing to give a fair proportion of their production to the export market, that "exporters are losing good-will and they are unable to maintain trade relationships with established foreign customers abroad, let alone take advantage of the present opportunity of establishing new customers."

H. R. Baldwin, vice president of Hammermill Paper Co., said that while he had not been called upon to make a statement he wished to lend his support to the exporters views

Plant Manager



GORDON R. SINGLETARY became Plant Manager of Brunswick Pulp & Paper Co., effective Oct. 13, according to E. J. Gayner, III, General Manager. He succeeds William T. Webster, who resigned to become Assistant General Manager of National Container Corp., Jacksonville, Fla. Mr. Singletary was promoted from General Superintendent. Native of Biloxi, Miss., Mr. Singletary has 22 years' experience in pulp and paper in the South. He entered employ of Calcasieu Paper Co., Elizabeth, La., in 1924 and during 13 years rose from mechanic and tour boss to superintendent. In 1938 he joined Brunswick as shift superintendent and rose to his present position. Mr. Gayner praised Mr. Singletary in a statement to PULP & PAPER INDUSTRY for his technical and business ability and also for his understanding and ability in labor matters.

MANAGEMENT AND COAST TAPPI PIONEER A NEW ACTIVITY

Refiners Have Their "Day"— Corrosion "Combatants" Next

Pacific Coast TAPPI lived up to its nationwide reputation of being one of the "liveliest" groups in the entire technical field of the industry at a "no-holds-barred" round table debate in stock refining in Portland, Ore., on Oct. 4. The seemingly sedate and august surroundings of Reed College, where the meeting was held, were be-stirred no little bit by:

1. What one speaker called "insults" flung at the long-respected "freeness" test of mill laboratories;

2. Sharp differences of opinion on whether refining machines can be compared or rated on purely mechanical grounds, or whether other factors must be considered; and

3. Further discord on whether American industrial genius has produced "precisely built, beautifully-made refining machines" or—taking just the opposite viewpoint—that Americans have lamentably failed at that particular job.

Despite all the fireworks at Reed College, probably most neutral observers would agree that the most important thing accomplished by TAPPI on the Pacific Coast during early October was the inauguration of the first technical seminars ever

held with the support and cooperation of a group of pulp and paper companies.

There is no doubt that a goodly number of old-timers in this industry may need to reach quickly for support when they read here that more than a score of Washington and Oregon pulp and paper mills actually paid seminar fees and sent their young men to attend these seminars, giving them two full days off from mill duties for the purpose. Such cooperative attitude toward joint participation seminars, or seminars of any kind, was unheard of in the old rugged days of pulp and paper making.

Dr. Emil Heuser, instructor in cellulose chemistry at the Institute of Paper Chemistry and a gentleman who might be called "The Mr. Cellulose" of this industry, told PULP & PAPER INDUSTRY that he had never heard of such industry-"blessed" seminars ever being held anywhere before. It may be other regions of North America will follow this lead, as interest in such undertakings already has been indicated in the South and Midwest.

Pictures on the next page show the "pioneers" in these seminars—which preceded and followed the Portland TAPPI meeting and were likewise sponsored by the Coast TAPPI organization with Dr. Harold Bialkowski, associate research director, Pulp Div., Weyerhaeuser Timber Co., making the arrangements.

Dr. Heuser, whose notable career includes extensive early work in rayon pulp and alcohol-from-wood pulp, who held the chair of cellulose chemistry at the famous University of Darmstadt, later lecturing at the University of Berlin, and who has written "The Chemistry of Cellulose" and other books, covered his subject like the proverbial blanket and his audiences at both seminars showed their colors by giving him plenty of time to listen, as well. They discussed molecular structure of cellulose, microscopical structure with emphasis on fibrillar character, X-ray photography and analysis, and chemical and physical methods of determining molecular weight of cellulose. If there's anything about the subject of cellulose that they



DR. EMIL HEUSER, of Institute of Paper Chemistry, Appleton, Wis., who was guest speaker at Pacific Coast TAPPI dinner at Reed College Portland, Ore., where he talked on cellulose evaluation methods—old and new. Dr. Heuser, author of "Chemistry of Cellulose," also held technical seminars on the subject in Portland's Multnomah Hotel on Oct. 2 and 3 and in Bagley Hall, U. of Washington, Seattle, on Oct. 9 and 10. He also addressed the Coast section of the American Chemical Society while in Seattle.

missed, then Dr. Heuser took care of that little matter when he made the principal address at the TAPPI dinner on the night of Oct. 4, before the "combatants" and audience from the stock refining session of that afternoon.

At the dinner, Dr. Heuser discussed new and old methods of evaluating wood pulp. He reviewed the old methods such as "copper number," alpha cellulose, etc. He then told of the viscosity test in which pioneer work was done by Dr. Harold Bialkowski while he was at the Institute in Appleton. The "newest tool," said Dr. Heuser, is the determination of molecular chain length and chain length distribution. He told of work done in this field at the Institute and compared these results with the information on the same subject in the recent publication of Dr. R. L. Mitchell, of Rayonier Inc., Shelton, Wash.

Corrosion—Next!

Before going into the matter of that pulp preparation verbal joust that preceded the dinner, it might be a fair warning to note right here that the Coast TAPPI is going to have another "hot" subject for a round table discussion at its Dec. 3 meeting at the Everett, Wash., Country Club on Dec. 3—"Corrosion." George Galloway of the Camas



HERBERT H. WYMORE, Technical Assistant to the Paper Mill Superintendent, Camas, Wash., mill, Crown Zellerbach Corp., whose paper "Correlation of Laboratory Tests with Practical Stock Refining" was an outstanding feature of the Portland, Ore., TAPPI meeting on Oct. 4. It is the first of a series of papers which will be entered in the Pacific Coast Shibley Award contest for 1946-7 (page 43).



PARTICIPANTS IN TAPPI'S CELLULOSE SEMINAR—in Rose Room, Multnomah Hotel, Portland, Ore., Oct. 2-3:

Seated (left to right): R. N. Hammond and H. A. Hauff, Weyerhaeuser Tbr. Co., Longview, Wash.; C. R. McCully, Univ. of Oregon; W. E. Wegner, Crown Zellerbach Corp., Camas Wash.; Dr. Emil Heuser, Institute of Paper Chemistry, Appleton, Wis., who conducted seminar; Ray S. Hatch, research director, Pulp Div., Weyerhaeuser Tbr. Co., who was chairman on second day; Thurston Yocum, Crown Zellerbach, Camas; Kenneth Chapman, Weyerhaeuser Tbr. Co., Everett, Wash.; Paul Billington and J. Harold Brown, Weyerhaeuser, Longview.

Standing (l. to r.): John F. Hart and John W. Klein, Longview Fibre Co., Longview; Arthur S. Gregory, Weyerhaeuser Tbr. Co., Longview; W. C. Jacoby, Crown Zellerbach, Camas; Dallas S. Dedrick, Weyerhaeuser, Longview; Robt. M. True, General Dyestuff Corp., sec'y-treas. of TAPPI Coast Section; Charles K. Clark, Weyerhaeuser, Longview;

L. R. Sherlock, Fir-Tex Insulating Board Co., St. Helens, Ore.; Ruth M. Watts and John J. McNair, Weyerhaeuser, Longview; P. M. Topari, Rayonier Incorporated, Hoquiam, Wash.; W. W. McCarthy, Weyerhaeuser, Longview; W. W. Marteny, Crown Zellerbach, Camas; Otto H. Sangder, Rayonier Incorporated, Hoquiam; Dalton L. Shinn, Crown Zellerbach, Camas; R. E. Draper, Weyerhaeuser, Everett; Paul E. Barr, Rayonier, Hoquiam; Bruce R. Mead, Crown Zellerbach, Camas; Harold A. Deery, Weyerhaeuser, Longview; J. A. Dykstra, Hawley Pulp & Paper Co., Oregon City; and G. R. Cranor, Oregon Pulp & Paper Co., Salem, Ore.

Others not in picture were Carl Sholdebrand, Spaulding Pulp & Paper Co., Newberg, Ore.; Ed Nunn and E. J. Roake, Crown Z. West Linn; George Galloway and Francis W. Flynn, Crown Z. Camas; A. K. Esterer, Weyerhaeuser, Longview; Chas. Cone, M & M Woodworking Co., Portland; William R. Barber, director, Central Tech. Dept., Crown Zellerbach, and half dozen Reed College and Oregon students.



HERE ARE PARTICIPANTS in the Seattle seminar at Bagley Hall, University of Washington on Oct. 9-10, which shares with Portland meeting shown above in pioneering a new industry and TAPPI activity. There were 43 registered in Seattle.

Front row (left to right): John F. Lincoln, I. F. Laucks, Inc.; A. C. Sellemann, Weyerhaeuser Timber Co., Everett, Wash.; Arnold Higg, Rayonier Inc., Hoquiam, Wash.; Dr. Heuser; K. R. Gray and W. J. Alexander, Rayonier, Shelton, Wash.

Second row (left to right): G. Sterling Bailey, Rayonier, Port Angeles, Wash.; Robert Marriott and E. C. Sherman, Crown Zellerbach Corp., Port Townsend, Wash.; Robert Vaughn, Fibreboard Products, Inc., Sumner, Wash.; E. R. Woodruff, Rayonier, Port Angeles; E. O. Ericson and Erik Ekholm, Puget Sound Pulp & Timber Co., Bellingham; and R. E. Brown, Rayonier, Hoquiam.

Third row: Joseph McCarthy, U. of Wash.; L. S. Keyser, Conrad

Dyar, C. C. Eck and Ben Briggs, all of Rayonier, Shelton; Quintin P. Peniston, U. of Wash.; Judson Holloway and R. L. Mitchell, Rayonier, Shelton; Frank Lovegren, Inland Empire Paper Co., Spokane, Wash.; and Edwin Lovell, Rayonier, Shelton.

Fourth row: Adolf Orup and R. I. Thieme, Soundview Pulp Co., Everett; P. C. Hamm and B. L. Bussard, I. F. Laucks; Olav Aho, Rayonier, Hoquiam; W. S. Munro of Laucks; John T. Hooper, Lloyd Van Blaricom, and Robert Tabke, Rayonier, Shelton; and A. T. Walton, Simpson Logging Co., Shelton, Wash.

In back row: J. C. Aggarwala of India (U. of Wash.); M. Felicetta; P. R. Deshpande, India (U. of Wash.); M. F. Smith, Simpson Logging Co., and Otto Goldschmid, Rayonier, Shelton. Among those not in picture were Harold Bialkowsky, of Weyerhaeuser Timber Co., who arranged the seminars, and Alfred Graef of the same company.

mill and Dr. Joseph McCarthy of the U. of Washington, the program chairman, have "signed up" Harry Richmond of Electric Steel Foundry Co. to be "his honor," the moderator.

Pulp Preparation Panel

Dr. James d'A. Clark, now of Chicago and Longview, Wash., consultant to Weyerhaeuser Timber Co. and the U. S. Army, was moder-

ator of the Reed College session notwithstanding that it wasn't always, strictly speaking, "moderate." He started right off with a healthy swing from the floor at the "freeness" test. He said the beater in the mill and its dependence on the freeness tester in the lab was like the man who set his watch by the noon whistle, only to discover the whistle tooter was tooting according to just another watch.

He called the freeness test too complex, too crude and declared "debris" was really the biggest factor in this test and without debris, one is liable to be misled. He suggested TAPPI specific surface area testing, TAPPI density test and classifiers (screen) as more reliable tests.

Some of his audience was reluctant to cast out the freeness tester and two or three young execu-



At PORTLAND, Ore., TAPPI MEETING:
Top row (left to right): JAMES D.A. CLARK, consulting engineer who served as Moderator of Stock Preparation panel and gave a paper; GEORGE GALLOWAY, Crown Zellerbach Corp., Camas, Chairman of the Coast section; WALTER HOLZER, Crown Zellerbach Corp., Camas, who made meeting arrangements.
Lower row: JOSEPH L. MCCARTHY, Univ. of Washington, Vice Chairman and Program Committee Chairman, and HAROLD BIALKOWSKY, Pulp Div., Weyerhaeuser Timber Co., who arranged for seminars on cellulose chemistry in Seattle, on Oct. 9-10, and Portland on Oct. 2-3, by Prof. Emil F. F. Heuser of the Institute of Paper Chemistry.



Left to right: COL. H. WYATT JOHNSTON, Sutherland Refiner Corp., who headed Canadian forestry troops overseas in the war; C. W. "WHIT" MORDEN, Morden Machines Co., and ROBERT M. TRUE, General Dyestuff Corp. Col. Johnston and Mr. Morden participated with C. H. Vickery, of E. D. Jones & Sons Co., in the panel discussion of "Practical Aspects of Stock Preparation," and Mr. True is secretary-treasurer of the TAPPI Coast section.



tives of western mills spoke up in its defense, one asking "why substitute fibre length for freeness?" and suggesting only that it be supplemented, while another observing that in practical mill operation the speed of the freeness test is an important consideration.

Shibley Award Paper

The first Shibley contest paper of the 1946-1947 season, presented by Herbert Wymore, technical assistant to the paper mill superintendent at the Crown Z mill in Camas, Wash., highlighted the Reed College session that preceded the dinner. This award will be made next spring to the best paper contributed by young mill employees who must be active in Pacific Coast operations (not laboratory only) to qualify.

In this paper, Mr. Wymore demonstrated graphically how a system of laboratory tests can assist in making the operation of jordan and refiners more efficient. The actual tests he reported indicated answers to a lot of questions in minds of operators today.

It reflected a new trend at the Camas mill of establishing a closer relationship between operations and the laboratory, with transferring of top technical men out into the mill as sort of "liaison officers" and key assistants to superintendents. It is a trend other mills in this industry are giving serious consideration.

Mr. Wymore's paper showed effects of operating variables of jordan and refiners upon the stock. Of special interest was the point he made that laboratory tests can give interesting data on results of new manufacturing trends in the west—for instance, the increasing use of Douglas fir and other firs, and changes in pulping procedures.

The audience got something of a "jolt" when a surprising result of a series of 166 tests on stock before and after a jordan treating unbleached sulfite furnish for tissue was revealed. Contrary to general information, a lower Mullen and Tensile recording was obtained with

a large freeness drop. (The complete paper and diagrams by Mr. Wymore immediately follow this article—with his explanation. Dr. Clark suggested "debris" effects would explain much in relation to the large freeness drop.)

How to Evaluate Machines?

Serving on the panel in the discussion of stock preparation were Dr. H. Wyatt Johnston of Sutherland Refiner Co., Trenton, N. J.; C. W. Morden of Morden Machines Co., Portland, Ore., and C. H. Vickery of E. D. Jones & Sons, Pittsfield, Mass.

The greatest discussion of the day was stirred up when Mr. Vickery tossed in a scheme for evaluating preparation equipment on a strictly mechanical basis. He contended that up to now, available information on merits of machines has been mostly "guesswork, even though it is good guessing" put forward in claims of manufacturers. He offered these bases for comparisons:

1. Inch cuts or inch bar strokes per minute (impact inches).
2. Total square inches per minute (or wet beating factor, determining net momentary contact area).
3. Maximum available contact pressure (pounds per sq. in.).
4. Surface speed.
5. Horsepower required, or efficiency of hp. (wasted vs. used hp.).

Using specific figures, he demonstrated his methods in evaluating different machines as they operated—first, for index paper and secondly, for glassine.

Dissenters said Mr. Vickery's table gave "only half the picture" the other half being effects of the operation; that it was okay only if stock was uniform and that it didn't take into account wide variation in design of refiners.

Mr. Vickery, however, stuck to his guns and said his formula would still, tell "the whole story as far as the machine itself is concerned" but he conceded that a certain amount of trial and error work would be necessary to get the standardized information on which to base the data.

An interesting point brought out by Mr. Morden was the great variety of uses to which refiners are put—ahead or after beaters and jordan, even ahead of pulpers and noted a trend toward fiber treatment even before it reaches the point of furnish. He told how his machines were used in San Rafael Paper Co. in Mexico

C. H. VICKERY, Vice President of E. D. Jones & Sons Co., of Pittsfield, Mass., who flew west to participate on Oct. 4 in the TAPPI Stock Preparation round table discussion at Reed College, Portland, Ore.

Mr. Vickery was met in Portland by John Fulton, Manager of Pacific Coast Supply Co., which represents the Pittsfield papermaking machinery manufacturing firm on the Pacific Coast.

in pulp departments ahead of any other stock treatment.

He disclosed that a super remote control system of the mill's own design has been developed by a New York state paper company for one-point control of all pre-treatment of stock.

Mr. Morden raised the question of whether a portable system of stock preparation is practical for a big mill. He showed a picture of a motorized Stock-Maker unit mounted on a steel sled, which could be rushed to any paper machine promptly, as desired, just as a "first aid car rushes to the scene of an accident."

Dr. Johnston discussed beating and refining with discs, as the Sutherland Refiner operates. Because his company's product was perhaps less widely known in the West, he was afforded the courtesy of dealing with primary and fundamental information about its physical makeup and operation.

He said a wide range of board and paper is made by disc refining methods in East and South.

He noted the great exactness and infinitesimal tolerances permissible in manufacturing of the machine's parts. He brought out the importance of fibrages and non-uniform action and the relations of pressures to production in using the Suther-

land Refiners. He explained the machines various controls and adjustments.

Dr. Johnston told how a decade ago disc refiners were used only to reduce oversize particles so mill equipment could handle them, but that now a modern single-rotation disc refiner is capable of doing both beating and refining on a single pass, often without assistance of any other preparation equipment. He mentioned their value in these days of fast machines and trend toward wood species of inferior quality or which are more difficult to convert than standard pulp species.

Dr. Clark said reasons for beating of fibers are just three: (1) to make them adhere; (2) to reduce their size; and (3) to densify them. In the same order, he said, these goals are accomplished by (1) rubbing, (2) cutting or splitting and (3) bruising or pounding, and he added no more and no less than this is done to fibers. He compared fiber skins to those of "hot dogs," saying they must be broken to make them "blister" and adhere. Hydration, he held, was natural to fibers.

A question "how to get Mullen up in Douglas fir?" brought suggestions that for both Douglas fir and Southern pine, fibers should not be cut, but should be rubbed to "get the skin off" and most of all, should

be bruised. It was held by Dr. Clark that it would be difficult to do this in just one treatment.

For the purpose of "warming up" a discussion, he listed the following 12 factors as involved in the mechanism of beating and refining, each of which, he said, influence the degree of rubbing, cutting or bruising, and should be controlled to achieve desired effects:

1. Consistency.
2. Setting of bars or bar pressure.
3. Bar material (affects sharpness).
4. Width of bars (pressure).
5. Speed between bars.
6. Angle between bars.
7. Degree of turbulence.
8. Ratio of working edges and surfaces to amount of stock.
9. Graduation of treatment.
10. Temperature.
11. Alkalinity.

Hydrapulper History

Shartle-Dilts Hydrapulpers are now being produced in quantity for many mills, but not long ago they were not so common, and considerable conjecture was heard around the mills as to which companies had the first ones.

According to Shartle Bros. officials, the first ones, back in the late 1930's, were installed at Bloomer Bros., in Newark, upper New York (not N. J.), and Continental Paper Co.'s Bogota, N. J., mill. First on the Pacific Coast were at Pacific Coast Paper Mills, Bellingham, Wash., and Pacific Paperboard at Longview, Wash.

CORRELATION OF LABORATORY TESTS WITH PRACTICAL STOCK REFINING

By Herbert H. Wymore

Technical Assistant to Paper Mill Superintendent, Crown Zellerbach Corp., Camas, Wash. (presented at TAPPI meeting, Portland, Ore. Oct. 4).

As the title of this discussion contains the assumption that the results of laboratory tests are being put to some practical use when correlated with the operation of stock refining equipment, some proof of the validity of such correlation should be given.

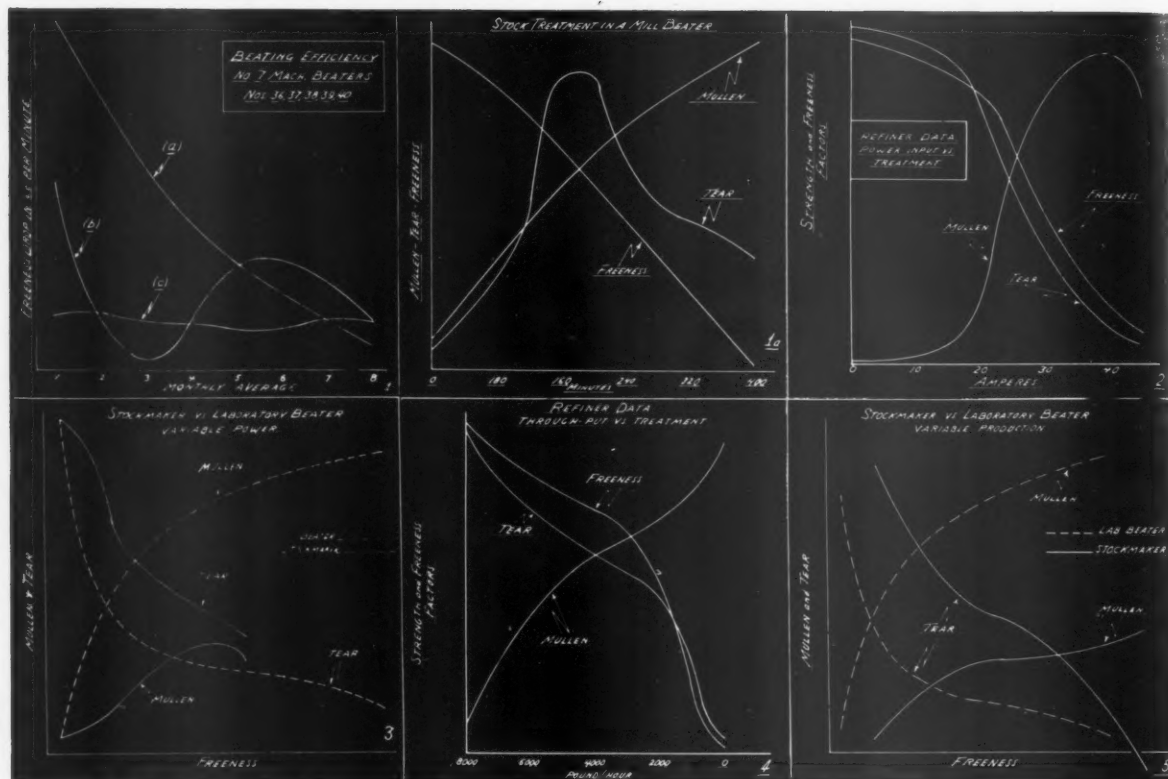
Any argument to prove that laboratory tests can be correlated with any type of practical mill operation would offer as its major point the very existence of the tests themselves. The paper industry uses laboratory tests extensively to numerically or visually express certain characteristics of their product from the time the raw material enters the mill until the finished paper is ready for shipment. Many of these tests were initially tools of research technicians alone; but, because of their increased use and recognized assistance to the operating departments, they have been so standardized, simplified, and mechanized as to result in their effective use by non-technical personnel in a routine matter. Data accumulated from such tests can be analyzed by all operating departments concerned, and many characteristics of wood, chips, pulp, stock, and finished paper can be predicted.

The study of laboratory test data, as obtained from routine tests and not necessarily from research work, as they pertain to the practical operation of stock refining equipment, is an enormous field of endeavor. It can extend back to the tree itself and study the effect of species, fiber length and strength, chemical components, rate of growth, age of the tree, and many other variables known to affect refining results. The study can follow on through the wood mill and pulp mills, and note the effect of such factors as chip length

and chip moisture content; the cooking variables, such as time, temperature, and pressure; the type of cooking liquor; the chlorine number or bleachability of the pulp; the amount of washing and screening; the amount and type of bleaching, if any; the pH of the raw stock; and many other variables tested for and assigned numerical values which serve to give clues as to their effect on refining results. In the time allotted for this phase of this discussion it is manifestly impossible to cover such a range of variables as they might affect stock refining. Therefore, this paper will be confined to the correlation of such laboratory tests as can be made during the operation of beaters, refiners, and jordaners.

The oldest form of paper stock treatment—that of beating the fibers—is still widely used to initially prepare the fiber for further treatment by refiners and jordaners. As the preparation in a beater is but a part of the final development of the desired characteristics of the fiber, laboratory testing of this piece of refining equipment is usually confined to a measurement, by means of the freeness test, of the amount of treatment obtained. Freeness test results can be correlated with machine stock demand, number or beaters available, further refining available or desired, and the characteristics desired in the finished sheet. From such correlation can be evolved a standard freeness at which the beaters should be dropped and which most efficiently satisfy the influencing factors named above. The standard freeness can then be made a part of the permanent operating requirements of the grade involved and future runs of the same grade can be made to the same freeness by changing the beating time to

A Shibley
Contest Paper



compensate for any changes in the stock itself or in beater efficiencies. Such a program will necessitate the testing of each beater dropped, the recording of the beating time used, and a follow-up to change beating times as the test results indicate.

In addition to making it possible for the beaters to supply a stock of uniform freeness to the refiners and jordan, the data obtained from the freeness tests and recording of beating times can be of valuable assistance in the mechanical maintenance of an efficient beating system. As beaters are used, there is a constant wearing away of bedplate and fly bars. If the roll position setting remains constant, there is a resultant lessening of bar-to-fiber-to-bedplate contact, and the freeness drop during a given period of time will decrease. If each beater in a system has been recorded for itself a figure such as freeness drop per minute of beating, the gradual lessening of beater efficiency can be graphically shown, and the needed adjustment of roll pressure or maintenance of fly bars or bedplate can be made as indicated.

Figure No. 1

Figure No. 1 shows the results of some actual mill experience on a set of five beaters, wherein three different phases of maintenance were used. Curve (a) shows the gradual loss of beating efficiency of a new bedplate and fly bar installation over an eight month's period, when no adjustment of roll pressure or maintenance of fly bars or bedplate was done. Curve (b) shows the variation in beating efficiency when adjustment or maintenance was done at about four month periods. Result of this type of operation would be a constant juggling of beating times to arrive at a uniform freeness with wide variation in type of treatment and consequent resultant variation in characteristics of the stock itself. Curve (c) shows the results obtained when beater efficiency is known at all times from laboratory tests and adjustment or maintenance is done as and when the test results indicate. Curves (a) and (b) represent periods of eight month's duration, while curve (c) is a representative eight month's segment of graphical data which extends over a total period of four and one-half years.

The correlation of freeness tests with tests made to show the consistency, temperature, rate of circulation, and roll pressure during a beating cycle will show that these factors have a large effect both on beating efficiency and the type of treatment obtained. However, these factors are more easily held constant or their range of variation is limited by the

type of equipment used so that they assume less importance in a routine testing procedure than does the freeness of the stock produced.

The development of stock strength in the beaters, except in a few specialized instances, is usually so much below that obtained in the succeeding refiners and jordan that the beater treatment is obscured as concerns correlation of such treatment with finished paper test results. Strength tests are desirable, however, when evaluating special pulps, when treating stock for special or trial runs, or when information is desired to show variation in treatments obtained under different operating conditions.

Figure No. 1a

Figure 1 (a) shows the results of laboratory tests taken from a beater treating 2,200 pounds of unbleached kraft pulp in a 400 minute beating cycle. It is noted that the mullen increases in practically a straight line in accordance with the straight line freeness drop. The resistance to pulling apart, that the fibres show initially in the tear test results, increases rapidly to the point where a true tear test is obtained, the values then dropping off in a normal manner as beating progresses.

If a stock preparation system is set up so that the stock goes from the beaters and then through one or more refiners before going to the paper machine jordan, some knowledge must be obtained as to the type and efficiency of treatment in these refiners. Because the refiners treat the stock a little farther along on the path to its final desired characteristics, the testing done at this point should be expanded so that the results can be correlated with results obtained when testing the final sheet of paper. Again we find the freeness test the most valuable because of the ease and rapidity of obtaining its values and because other characteristics of the stock can be closely predicted from the test results. However, the strength development of the fiber progresses to such an extent through the refiners that the qualities of bursting and tearing strength assume increasing importance and consequently should also be known. Power input, amount of stock treated, and consistency of the stock are the factors having the greatest effect on the type of treatment obtained, and they must be recorded.

Graphical presentation of the test results under varying conditions of the influencing factors appears to be of the most value in correlation of data to arrive at the type of treatment giving the most efficient operation of the refiner and the



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(NOTE: Several chain grocery organizations are pre-packing fresh produce in specially developed paper "window" bags before it reaches neighborhood stores.)

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closest possible approach to the desired characteristics of the stock. Therefore, the discussion of the correlation of laboratory tests with the practical operation of one type of refiner will consist largely of the showing of some curves of test results obtained while operating a Morden Stock-Maker on a 100% bleached sulfite furnish. Samples were taken after a Stock-Maker installed between the beater and chests of a machine producing about 3,100 pounds per hour of bleached sulfite waxing grades requiring a fairly heavy treatment of the fiber to obtain the characteristics desired in this type of sheet. The refiner was operated under different conditions of stock through-put and power input; the samples were tested for freeness, consistency, mullen, and tear according to a standard procedure used by the Camas Mill Technical Department, such procedure differing from the TAPPI standards by only the basis weights of the strength test sheets and the humidity conditions under which they were tested.

Figures 2 to 5

Figure 2 shows the results obtained by varying the power input while treating a little over 3,200 pounds of stock per hour at a consistency of 3.3% bone dry fiber. Note that the tests conform to the normal shape of curves from standard laboratory beater test sheets, and that a power input can be found at which the refiner will produce a stock of any desired mullen, tear, or freeness within the range of these data. Also, there can be found the power input at which the most rapid development of mullen strength or freeness drop takes place, or where the least damage is done to the tear strength.

Because of the similarity of the refiner strength curves to laboratory beater test curves, a sample of the same stock being refined was tested in the laboratory beater. The results are shown in Figure 3, the Mullen and tear strengths being plotted against the freeness of the stock. At the same freeness the laboratory beater shows a higher mullen and a lower tear than does stock from the refiner. Such data are indicative of the greater hydrating capacity of the beater and of the greater cutting action of the refiner. A natural result of these findings was to endeavor to operate the refiner in such a manner that tests more closely approaching those from the laboratory beater could be obtained. Consequently, the refiner was operated at different production rates with a constant power input. Stock flow through the machine was controlled by choking back after the refiner.

Results were as shown in Figure 4. The Mullen strength increased steadily and showed no break-off at a maximum

while the tear strength and freeness drop decreased slowly at high rates of stock flow, but dropped sharply at production rates below 2,000 pounds per hour. Again comparing with the laboratory beater, Figure 5 shows much the same relationship as before. However, the physical appearance of the test sheets, plus the higher Mullen and a tear strength about equal to that of the beater in the low freeness range, proved that the refiner gave more of a hydrating action at the lower production rates. Hand sheets prepared from stock of the same freeness showed that when such freeness was obtained by high power input and heavy production through the refiner, a brittle opaque sheet was formed. When rate of production was low at a medium power input, the stock at the same freeness gave a sheet more flexible and transparent.

From the type of tests discussed here, a more thorough knowledge can be had of the treatment given the stock by a refiner under any operating condition. Already knowing the type of stock produced, the limitations of operating variables imposed by individual systems, and the requirements of the finished sheet, the setting of refiner controls can be correlated with such knowledge to result in the refiner operating in the most efficient range.

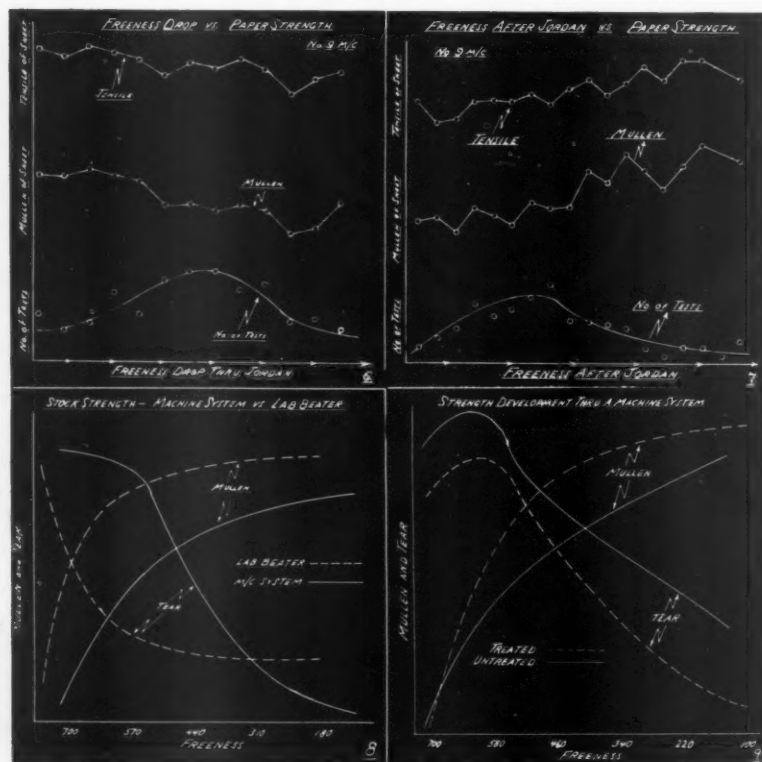
The correlation of laboratory test results with operation of the paper machine jordan is of more importance than such tests taken anywhere else in the stock preparation system. It is at the jordan that the final treatment is given the stock before it goes to the paper machines and all of the many and varied requirements of the modern day paper grade must be met by a corresponding versatility in the type of treatment through the jordan. As any change in treatment at the jordan is felt almost immediately at the paper machine and correspondingly in the test results in the finished sheet, the jordaning action can be closely correlated with finished sheet properties. An example of much correlation can probably best illustrate how operation of the jordan can be reflected in paper test results and how such correlation can point the way toward obtaining the desired characteristics in the stock.

Figures 6 and 7

Figure 6 presents the results of a series of 166 tests made during a 60-day period on stock before and after a jordan treating a 100% unbleached sulfite furnish for a tissue grade. The freeness drop through the jordan was divided into 10 c.c. increments and the paper test results, obtained at the same time as the jordan was sampled, were averaged and plotted for each of the 10 c.c. intervals. It is noted that as the freeness drop through the jordan increased a lower Mullen and Tensile were obtained on finished sheet. This apparent reversal of the normally noted strength increase at lower freenesses led to an investigation for the reason. First, laboratory beater tests made on the stock coming from the jordan showed that the jordan was treating the stock to its maximum inherent strength, there being little or no increase and at times a decrease in strength upon further treatment in the laboratory beater. Second, it was found that the percentage of fines from the cutting action of the jordan at low freenesses increased to such a point that washing through the machine wire took place, sheet formation was disrupted, and low strength was noted on the finished sheet.

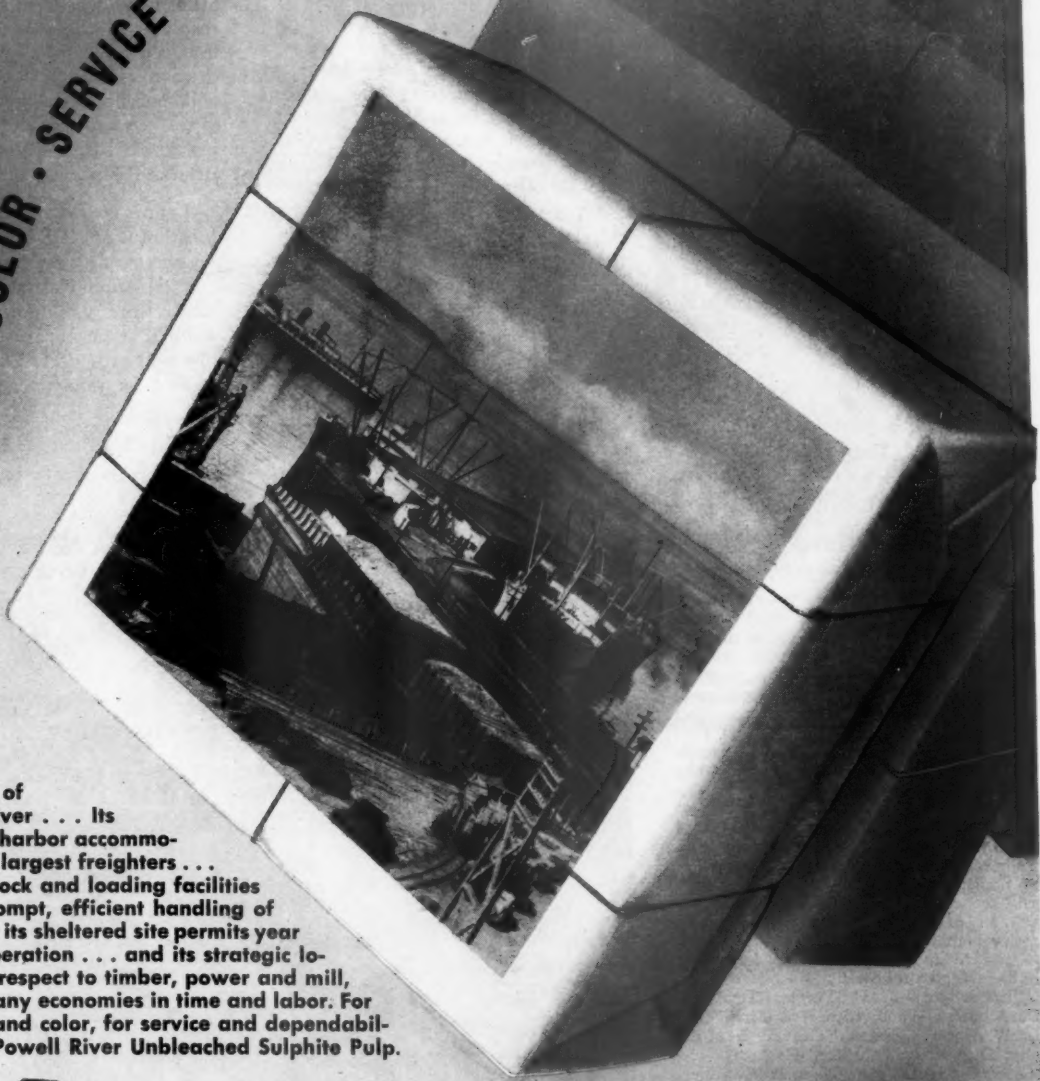
The curve showing the number of tests falling in each 10 c.c. interval follows almost exactly the pattern of a normal curve of distribution. This indicates that the machine was operated most of the time within a fairly narrow range of freeness drop through the jordan. This range undoubtedly where the machine operated most efficiently or where sheet requirements other than Mullen and Tensile were most easily achieved.

Another plot of the same data is given in Figure 7 to show the correlation between after jordan freeness and finished sheet strength. Here again is noted a lower Mullen and Tensile at the low freenesses. The curve showing the number of tests at each 10 c.c. increment of after jordan freeness indicates that the machine had to operate in a jordan-



(Continued on page 56)

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Krug Seeks to Clear Way For Alaska Pulp-Paper Mill

In a letter to this magazine, Interior Secretary Julius A. Krug has declared himself forcefully for "large scale expansion" in Alaska and particularly for the taking of necessary steps to clear the way for a pulp and paper industry in the territory.

He again voiced his support of court action to quickly settle Indian claims, instigated by former Secretary of Interior Ickes, to some of the most desirable pulpwood water-side areas in Alaska. He indicated a decision would be made very soon removing this cloud over possible investment by private industry in a pulp and paper mill in the territory. It is possible a lump sum payment would be made to settle aboriginal Indian claims.

Previous reports on these Indian claims were published in our September issue, page 48, and in other previous issues.

Mr. Krug's letter to PULP & PAPER INDUSTRY follows:

THE SECRETARY OF THE
INTERIOR
WASHINGTON
Sept. 2, 1946

"Thank you for your letter of July 18, transmitting the excerpt from the July issue of PULP & PAPER INDUSTRY. I, too, enjoyed our meeting in Seattle, and hope that there may be others in the future.

"With regard to Native claims in Alaska, the Office of Indian Affairs, the Division of Territories and Island Possessions, the Bureau of Land Management, and other interested agencies in this Department are working with all possible speed to settle this issue. The whole question of deciding Native claims is, of course, both complex and time-consuming, but I have every hope that substantial progress toward its solu-

tion in the near future can be made.

"As I believe you know, I have every sympathy with the position of the pulp and paper industry and of the other industries interested in Alaskan resources in their desire to see the issue settled. At the same time it is the duty of this Department to protect those Native claims which prove to be valid. As I said in Seattle, I believe the matter should be resolved in the courts, and I hope that court action, as well as a clarification of this Department's policy, will soon be forthcoming. One phase of the controversy dealing with trap sites is now before the courts in Seattle and Alaska.

"I am confident that once the question is settled, there will be ample opportunity for both the Natives and the non-Native industries in Alaska. In my opinion, the resources of the Territory are so extensive that they will provide for large-scale expansion for many years to come.

Sincerely yours,

(Sgd.) J. A. KRUG,

Secretary of the Interior."

Annual Hi-Jinks Brings Out Big Los Angeles Area Crowd

Nearly 400 paper mill men, wholesalers and jobbers showed up at the evening banquet . . . a record-breaking number of golfers swarmed over the Riviera Country Club course near Los Angeles . . . more hits were made, and more runs scored, in the softball game than ever before . . . the Charity Fund take was 25% above normal . . . so all hands voted the 1946 Paper Mill Men's Hi-Jinks a success from every viewpoint.

The Hi-Jinks is the annual affair at which paper wholesalers and jobbers of Southern California are feted by the Paper Mill Men's Club, social organization of Southern California papermakers and mill representatives. This year Irving Damon of Northern Paper Mills, was general chairman.

First to fourth golf prizes, in order, in each flight, follow:

First flight: J. C. Perrin, Towlsave Corp.; John Woods, Smart & Final Co.; L. W. Casey, Johnson, Carvell & Murphy; Otto Bruget, Juillard-Cockroft.

Second flight: Jerry Thiem, Milwaukee Lace Paper; R. E. Pentz, Continental Bag Specialties; R. T. Close, Smart & Final Co.; Don Ingram, Ingram Paper Co.

Third flight: Ray Godfrey, Schermerhorn Bros.; O. B. Brown; William Final, Smart & Final Co.; Ted Corcoran, Corcoran Paper Co.

Fourth flight: Jack Leiser, Pioneer Wrapping; F. D. Smith, Paterson Parchment Co.; Les Remmers, Crown-Williamette; Dwight Tudor, Independent Paper Box.

Assisting Mr. Damon were:

Jack Leiser, Pioneer Wrapper, vice-chairman; Chester O. Gunther, Crown-Williamette, finance; George F. Skleba, Dixie Cup, entertainment; J. C. Fischer,



THE 1946 PAPER MILL MEN'S HI-JINKS in Southern California was a big success.

Top row (left to right): J. W. Genuit of Fernstrom Paper Mills, president of the club; James Whitney of Haas, Baruch & Co., who spoke for guests; Irving Damon, of Northern Paper Mills, who was Hi-Jinks chairman; a lady accordionist, and Leo Corder, who led the singing, with her accompaniment.

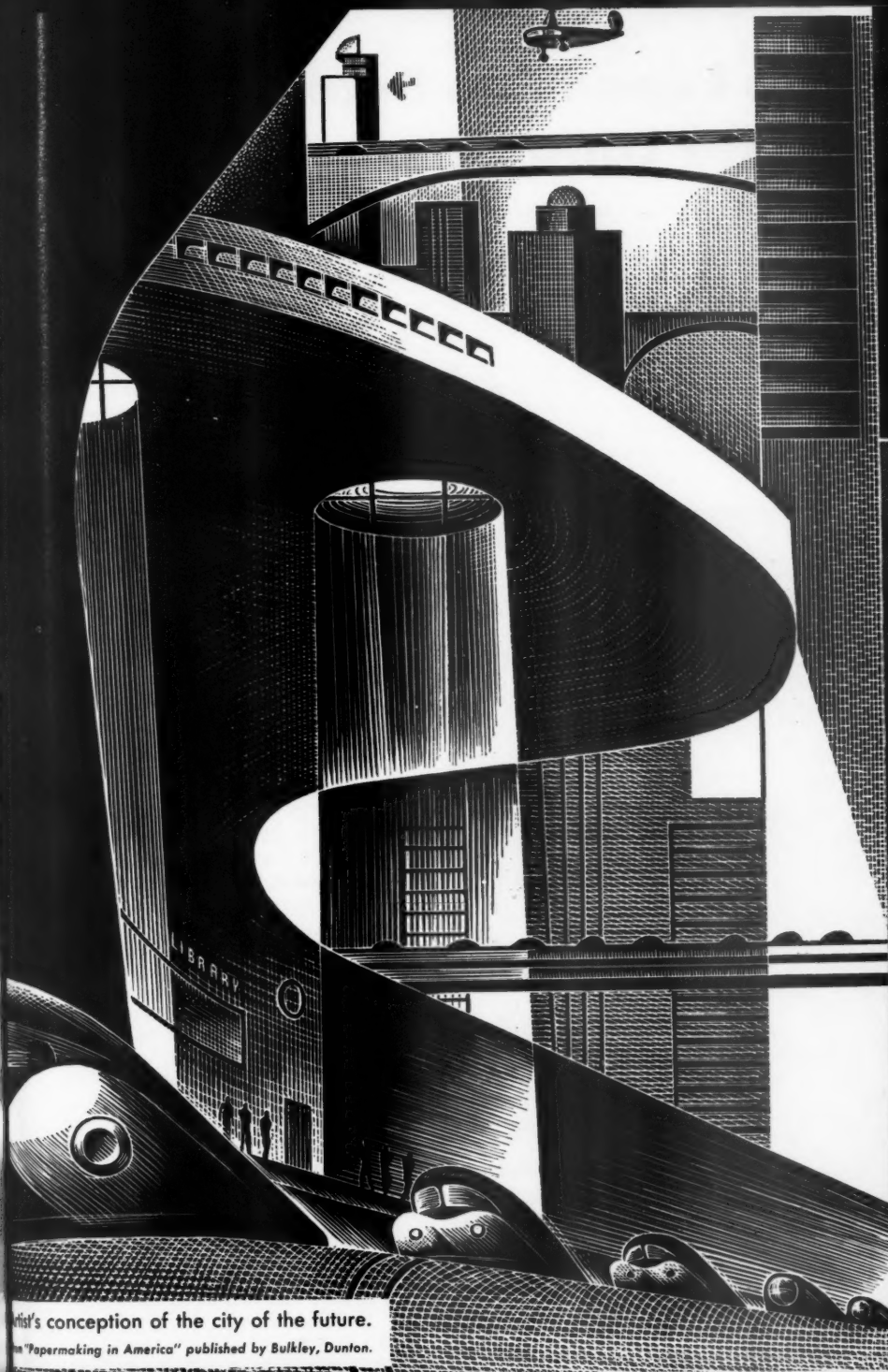
Below, the Wheel of Fortune, a popular attraction.

Sherman Paper Products, golf; Merle M. Paup, Comfort Paper, door prizes; W. A. McBride, U. S. Envelope, program; Neil B. Sinclair, Sinclair-Lang, reservations; Robert T. Boardman, Cords, Inc., softball; Paul R. May, Pomona Paper Products,

Harry Huntsman, Western Waxed Paper, L. A. Gardner, Nekoosa-Edwards, and John Kirby, Kirby Sales, sweepstakes committee; B. Bahnsen, California Cotton Mills, arrangements; C. H. Johnson, Pioneer-Flintkote, greeters.

PULP PAPER

DOMESTIC
EXPORT
IMPORT



Artist's conception of the city of the future.

From "Papermaking in America" published by Bulkley, Dunton.

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To the buyers, sellers and exporters of pulp and paper Bulkley, Dunton offers important advantages in the market. The unique distribution facilities and long-established domestic and world-wide connections of this organization assure immediate and lasting benefits to mills which have their eye on the future.

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295 Madison Avenue, New York 17, N. Y.

Canada's Pulp Expansion Boom Will Continue for Long Time

FIRST SULFATE PULP was made at this new Marathon mill at Marathon, Ont., in late September and first bleaching in late October. Capacity: 300 tons per day. PULP & PAPER INDUSTRY issue of Sept., 1945, page 32, carried complete list of equipment in this mill. Entire pulp-making operation is under one roof. Upper view, taken from air, shows part of town site in foreground. For 2,500 population, 245 dwelling units are planned. Mill is built on sheltered peninsula of Lake Superior, 180 miles east of Port Arthur. Lower view is close-up of mill. Main building is 660' x 188'; adjoining storage building, 440' x 204'.

You don't have to probe very deep in eastern Canada these days to find evidence that the expansion in pulp and paper production is barely under way, and that the current boom in mill construction and improvement is likely to continue for some time.

Pulp and paper projects in eastern Canada and Newfoundland recently completed or actually under way represent an investment of

more than \$110,000,000. Other undertakings still in the negotiation stage in eastern Canada account for another \$30,000,000. In British Columbia, construction now in progress calls for an expenditure of more than \$12,000,000, with a substantial additional amount already earmarked for new construction.

The estimate made by PULP & PAPER INDUSTRY more than a year ago that postwar expansion in Canada's pulp and paper mills would cost about \$150,000,000 was therefore pretty close to the mark.

Today, factors restraining development are rising costs, labor strikes in key industries such as steel, shortage of manpower for the woods as well as the mills and difficulty in getting prompt delivery of required equipment.

Against these factors is the belief that the market will continue strong for newsprint, sulfate pulp and most of the other major products of the industry for years to come.

PULP & PAPER INDUSTRY recently completed a tour of some of the key points in the eastern Canadian industry's production and administration centers. Everywhere it found a striking display of confidence and a determination to meet the day's problems with resourcefulness and energy.

The forward-looking attitude of the industry is effectively exemplified in the mills only recently brought into production and which were built or converted during a period of exceptional difficulty.

The new Marathon mill of Marathon Paper Mills of Canada is a "standout"—brand new in every detail and a model likely to be widely adapted wherever new sulfate mills are planned. This 300-ton mill swings into continuous production this month, with full bleach production to follow shortly afterwards.

The Red Rock mill of Brompton Pulp & Paper Co. has been in full operation for several months, its output being kraft liner board.

The Espanola mill of the KVP Co., Ltd., subsidiary of Kalamazoo Vegetable Parchment Co., went into production early this summer and is now producing some 200 tons of kraft pulp and 40 tons of groundwood daily, with the bleach process soon in full swing. Early next year Espanola will have one of its paper



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FAVORITE
MAGAZINE! ”**



Of course there's something obviously *wrong* in this picture, but there's something very *right* in it too! For the familiar paper on which magazines — as well as mail-order catalogs and business forms — are printed, is a product of wood, converted by modern technical skill to meet the many varied needs of modern living.

As a leading grower, producer, and converter of wood cellulose materials — including specialized printing and communication papers — St. Regis occupies an important position in basic American industry. Operations range from forest to finished product — from the cultivation and conservation of its own timber reserves to the manufacture of pulp . . . opaque printing papers for catalogs and magazines . . . heavy-duty Multiwall paper bags for packaging foods, chemicals, and building materials . . . Panelyte plastic parts for structural use in refrigerators and electrical and automotive equipment.

In view of the increasing demand for these products, St. Regis has expanded its manufacturing facilities . . . broadened its technical research . . . to provide more and better wood-cellulose products for expanding modern needs.

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machines running, producing mill rolls.

At Terrace, near Schreiber, Ont., Long Lac Pulp & Paper Co., subsidiary of Kimberly-Clark Corporation, is laying out plans for a \$15,000,000 300-ton bleached kraft pulp mill. A construction camp is already established.

Blind River, west of Espanola, may soon be the site of another sulfate mill.

Some of the other companies with expansion programs under way or about to start include: Abitibi, \$2,500,000; Great Lakes, \$2,500,000; Bowater's Newfoundland, \$10,000,000; Canadian International, \$2,000,000; Minnesota & Ontario, \$2,000,000; Fraser Companies, \$2,000,000.

And these are only the companies with major programs announced, and they do not include the British Columbia developments.

Comparing 1920's Boom

Most of the production upswing, as reflected in new construction and improvement of existing mills, is in sulfate pulp. The kraft manufacturers account for some \$50,000,000 of the total, and in some quarters, where the memory of the newsprint "boom and bust" of a few years back is still a dark and vivid memory, a few observers are asking whether the rise in sulfate is not heading in the same direction. But that feeling is not shared by the men closest to the picture.

And there is an important distinction

between the present developments in kraft and the over-expansion in newsprint of the late 20's. Nearly all the kraft manufacturers have their own market and distribution facilities; they aren't offering their output in the open market, as the newsprint mills did a decade or so ago. And the speculative element, encouraged by the financiers, which was so dominant in the newsprint boom era is almost completely lacking today. The kraft manufacturers today know where they are going. The newsprint operators in the 20's weren't so sure.

It would not be surprising if there were to be an even wider diversion into kraft and other non-newsprint production in Canada during the coming months.

Robert M. Fowler, able young president of the Canadian Pulp and Paper Association, told PULP & PAPER INDUSTRY in his Montreal office that paper manufacturers in Canada could not be expected to go on producing newsprint under continuing unfavorable price conditions. The increases authorized by OPA on newsprint merely offset the dollar parity and took little or no account of the rise in newsprint production costs.

Unless there is more encouragement for the newsprint manufacturer he may be expected to follow the example of many mill operators in the United States who diverted their newsprint capacity to book and magazine stock and other papers, although in Canada the trend will

more likely be towards kraft, liner board, etc., as already indicated in the new construction.

Mr. Fowler points out that a major problem of the industry in Canada is one of supply. There is a tremendous demand and only so much newsprint, and there is a feeling that more and more Canadian newsprint will find its market in countries that have so far shown a realistic conception of the price factor.

There appears to be no sign of a slackening in the demand for kraft. W. H. Palm of Montreal, who is kraft administrator for Canada's Prices and Trade Board as well as an executive of Brompton Pulp & Paper Co., says that the acute shortage of cotton and jute have been largely responsible for the tremendous demand for kraft multi-wall shipping sacks and that even when, and if, these shortages are relieved many of the present customers for kraft products will continue. Jute and cotton may find a tough competitor, and a permanent one.

Pulp products now account for 80% of the "bag load" in Canada, compared with 50% before World War II. Building materials such as cement, and foodstuffs, have been given top government priority, with the result that ordinary wrapping paper and grocery bags are in increasingly short supply, and Mr. Palm predicts that the situation may reach its most acute stage next spring.

LongLac Will Be 300 Tons-Per-Day Bleached Sulfate; K-C Niagara, Wis., Expansion Behind Three Months

The new Long Lac subsidiary of Kimberly-Clark Corp. at Terrace Bay, Ont., will make 300 tons a day of bleached sulfate pulp, going into production in late 1948.

This was announced by Henry C. Boon, vice president of operations of K-C at a sales meeting in Neenah, Wis., last month. Mr. Boon summarized the progress on other far-flung expansion programs of his company and Ernst Mahler, executive vice president, in another address, announced completion of Kimberly-Clark's new "Technical Center"—latest of the industry's modern laboratories — which has been built at Neenah.

Mr. Boon's comments on other components in the expansion program:

A modernization program at the Niagara, Wis., mill that represents

the corporation's largest expansion in the book paper field in a quarter-century, is three months behind schedule, postponing a production increase until early 1949.

Work on an addition to the Lakeview Mill at Neenah has been completed but production from a new creped wadding machine will be delayed until the first quarter of 1947.

The new Memphis (Tenn.) Mill is being reconverted on schedule; the first of two creped wadding machines is scheduled to begin operation sometime in the second or third quarter of 1947.

Work has been completed on a new plant established at Kimberly, Wis., for the development of new products. The audience also heard of the progress of equipment modernization taking place at all mills of the corporation.

Establishes Flax Pulp Mill

A flax pulp mill is to be established in St. Paul, Minn., for the manufacture of pulp from the flax straw produced in the Northwest, according to an announcement by the St. Paul Association of Commerce. The pulp will be shipped to a Southern paper mill for use in the manufacture of cigaret paper and other specialty papers.

Minnesota and Oregon are the states supplying bulk of flax for U. S. cigaret papers.

Changes at Merriton

A. E. H. Fair has been promoted from the vice presidency to the presidency of Alliance Paper Mills, Ltd., at Merriton, Ont., succeeding Harold Crabtree, who is now chairman of the board. P. F. J. Dolan, formerly assistant to the manager, is secretary.

R. C. Shearer has been appointed manager of the Merriton division.

He was formerly resident manager of St. Regis Paper Co. in Norfolk, N. Y.



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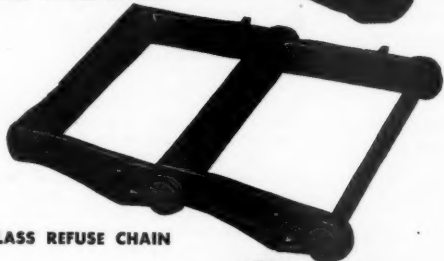
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Fraser Joins Parade Of New Canadian Mills

Another sulfate mill for eastern Canada, to be located in north-east New Brunswick, is announced by the Fraser Companies, Ltd., which now operates mills at Atholville and Edmundston, N. B., a paper mill in Madawaska, Maine, and other forest products enterprises.

The new mill, to cost about \$4,000,000, will be built near Newcastle in the Miramichi River area, according to President Harold Crabtree.

The Foundation Co. of Canada has been awarded the general contract. The new mill will be designed to produce about 120 tons daily of unbleached sulfate pulp. It is hoped to have it in operation sometime in 1948.

The company's parent plant in Edmundston produces sulfite pulp and groundwood pulp, display boards and various types of paper containers. At Atholville, the wholly owned subsidiary known as Restigouche Co. produces high grade sulfite. The Madawaska plant manufactures groundwood papers and bleached sulfite quality papers.

The industry has been welcomed in the Newcastle district as it will be the first operation of major size on a 12-month basis there.

Top executives of Fraser Companies were highly honored at the last annual meeting of the Canadian Pulp and Paper Association when Mr. Crabtree was elected president; R. G. MacFarlane, manager of the lumber and logging department, was elected chairman of the woodlands section, and W. H. Birchard, assistant chief chemist, was made chairman of the technical section.

Equipment Selected For New Florida Mill

Contracts have been awarded for principal equipment for the new plant of the Alabama Pulp and Paper Co., with construction crews to be on the ground in November, according to James H. Allen, president. It is planned to begin operations in Dec. 1947.

The Alabama mill, to be erected near the site of Florida Pulp & Paper Co. at Cantonment, Fla., is a wholly owned subsidiary of St. Regis Paper Co., of which Mr. Allen is a director.

Equipment already contracted for will cost \$3,666,000, and other costs to be added to this include \$1,241,728 for additional materials and equipment, \$1,500,000 for labor. The multi-wall bag building will cost an additional \$950,000. Bag equipment will be additional.

The general contract for construction of the project is held by Merritt, Chap-

man and Scott, 17 Battery Place, New York.

Equipment ordered: Black-Clawson paper machine and re-winder; Westinghouse turbines, condensers, turbines for boiler feed and fire pumps, drives, switchgear, power centers, drives for paper machine and winder, motors and controls; two Fibre Making Process barking drums; Chicago Bridge and Iron Co. digesters; Swenson evaporator; Link Belt wood room screens; D. J. Murray Mfg. Co. chippers; Impco washing system, flat screen, dockers and repulpers and save-all; Dorr Co. mud filter and causticizing system; and Shartle Bros. broke beater.

Heppenstall Company Moves in Philly

Heppenstall Company, Pittsburgh, announces the removal of its Philadelphia office from the Drexel Building. The new address of this sales office is Room 1446, The Broad Street Station Bldg., Philadelphia 3. The telephone number is Rittenhouse 69211.

Dick Laftman Awarded King of Denmark Medal

Richard Henrik Laftman, vice president and general manager of National Container Corp., Jacksonville, Fla., has been awarded the King Christian X Medal of Liberation by the King of Denmark "as an appreciation of your contribution to Denmark's cause during the years of Nazi occupation."

Mr. Laftman was active in 1940 when the Danish training ship "Danmark" was stranded at Jacksonville for six months when war broke out between Germany and Denmark. Through his efforts clothing and other articles were obtained for the men aboard ship.

Dersch Joins Calco Marietta Works

Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., announces appointment of John W. Dersch as project engineer of the Marietta Works, Marietta, Ohio.

Mr. Dersch has been project engineer since June, 1945, of the Brown Co. of Berlin, N. H., but was with Calco prior to that period.

At Quebec City

Eugene Neal has been appointed assistant control superintendent of the Anglo-Canadian Pulp & Paper Mills, Quebec City. He was formerly industrial engineer with the Howard Smith Paper Mills.

Hercules Expansion

The city of Brunswick, Ga., in conformance with an amendment to its charter passed by the General Assembly and approved by Governor Arnall in March, 1945, has adopted an ordinance ceding title to the Hercules Powder Company of certain streets and city lots to make possible the expansion of that corporation's plant.

Eubank Appointed Manager at Memphis

Appointment of C. G. Eubank as manager of the Kimberly-Clark Corp.'s new Memphis creped wadding mill is announced by Henry G. Boon, vice president in charge of operations.

Mr. Eubank does not expect to begin full-time residence in Memphis until after Jan. 1. Plant operation is anticipated by mid-1947. Mr. Eubank has been with K-C for 20 years, since 1936, as director of industrial relations with headquarters at Neenah, Wis.

He was in the U. S. army from 1941-1946, the last half of his service being in India-Burma-China with a signal battalion. He held rank of colonel.

Kimberly-Clark Memphis Equipment Ordered

All major manufacturing equipment is on order for Kimberly-Clark's new Memphis creped wadding plant, it is reported by Henry G. Boon, vice president in charge of operations.

Two creped wadding machines and auxiliary equipment, converting equipment and machine tools for eventual machine-shop operation are major items for the Memphis plant.

Converting of raw material is expected to begin about the middle of November in the new plant. The first creped wadding machine is expected in the second quarter of next year.

Pictures of the Memphis plant were published in last month's PULP & PAPER INDUSTRY.

New Distributors For S. D. Warren Co.

Several new distributors have signed with the S. D. Warren Co., according to a recent announcement. Among the firms which took over Warren paper distribution effective July 1, 1946, are: The Newhouse Paper Co. of Minneapolis, which will represent the firm in that city in addition to Dubuque, Iowa; Des Moines, Iowa; St. Paul and Moline; the Virginia Paper Co., Richmond, Va., and Charlotte, N. C.; and the MacIntosh Paper Co., Chicago.

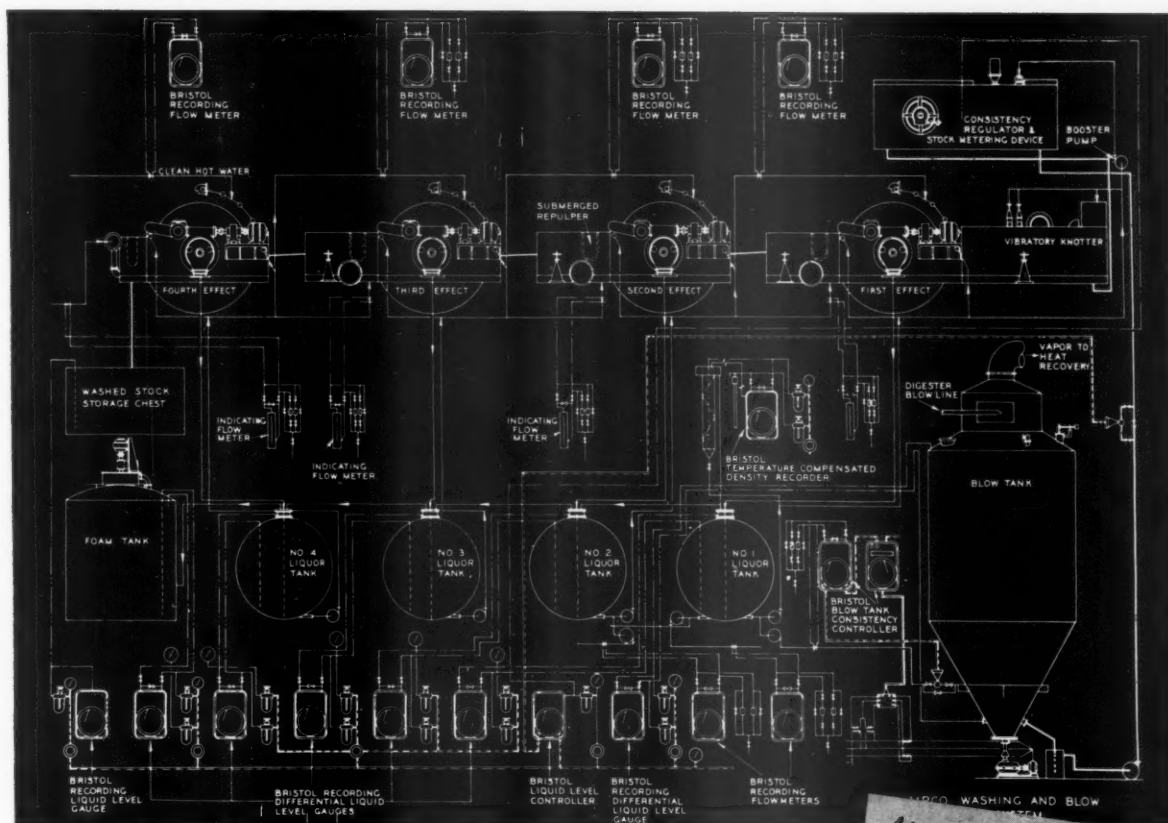
These arrangements have been made in line with S. D. Warren's program of long range planning for increased production and future sales promotion, company officials stated.

Guest Chief Chemist At Jacksonville Mill

Karl Guest, who became chief chemist of National Container Corp., Jacksonville, Fla., on July 1, graduated in chemistry in 1936 at the age of 20 years. During his school years he obtained some practical experience with the Champagne Paper Corp., Estill, S. C. Upon graduation he went to work for Union Bag, and joined National Container in 1938. After 4½ years in the armed services, he returned to National Container as assistant chief chemist under R. H. Stevens.

Scoular at Thorold

W. B. Scoular, formerly chief engineer for Powell River Co., has assumed his new duties on the engineering staff of Ontario Paper Co. at Thorold, Ont.



Washing System Courtesy Improved Paper Machinery Corporation

HOW TO GET MAXIMUM RECOVERY OF "BLACK LIQUOR" WHEN WASHING KRAFT

At vital points, Bristol instruments record and control the flow through this modern system of stock washing.

In the processing of Kraft or Brown stock, complete removal of "black liquor" from the pulp fibres is of vital importance.

Thorough washing of the pulp with hot water is required to produce a pulp of acceptable color. Yet the amount of water must be kept to a minimum in order to keep the liquor strength up. The material balance of both liquid and pulp must, therefore, be maintained within close tolerances.

An effective solution to the problem is found in the accompanying diagrammed process. Note that Bristol equipment plays a major

part in maintaining the necessary balances throughout this system.

Bristol Flow Meters enable positive regulation of the dilution factor. The saving in evaporation heat pays for their cost many times over. Bristol Liquid Level Gauges tell when the lowering of the level in a tank means that some part of the system is being starved, calling for adjustment. A Bristol Consistency Controller on the blow tank assures proper dilution and dispersion of the fibres, while other Bristol Instruments have important functions.

Here, in a single system, is striking evidence of Bristol's wide-

ranging usefulness in modern process control. For further information, write for literature. Address THE BRISTOL COMPANY, 142 Bristol Road, Waterbury 91, Conn. (The Bristol Co. of Canada, Ltd., Toronto, Ont., Bristol's Instrument Company, Ltd., London, N.W. 10, England.) West Coast: Branch Factory — 40 Berry St., San Francisco 7, Calif., Branch Office — White Bldg., Seattle 1, Washington. Lake Region: Branch Factory and Office — 351 East Ohio St., Chicago 11, Ill., Southern States: Branch Office — Comer Building, Birmingham 3, Alabama.



November 1946

Engineers process control for better products and profits

**AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS
PULP & PAPER INDUSTRY**

Shibley Contest Paper

(Continued from page 46)

ing range wherein strength factors had to be sacrificed in order to achieve operating efficiency and other desired sheet characteristics.

Correlation of these data to arrive at the most efficient jordan setting is easily done by taking the after jordan freeness at which the machine gives the maximum in quality and quantity of production, adding to this figure the freeness drop through the jordan at which the same factors are achieved, thereby arriving at a figure giving the freeness of the stock which must be supplied to the jordan. Throughout all such testing, a record must be kept of stock consistency, power input, and jordan choke setting so that the effect of any change in these factors can be noted.

Laboratory tests on each individual piece of refining equipment in a machine stock preparation system can be obtained to show the development of stock characteristics throughout such a system. Samples can be taken of the raw pulp entering the system, before and after each piece of refining equipment, after each addition of recirculated stock, and finally at the paper machine head box. Freeness tests and strength sheets prepared from such samples give excellent correlations with laboratory beater test results, differences in operation of the refining equipment, variation in the type of pulp supplied, or effect of special additions to or treatments of the stock.

Figures 8 and 9

Figure 8 shows the Mullen and tear strength curves through a machine system on a 100% kraft pulp furnish compared to laboratory beater test results on the same pulp at the same

freeness. The normally noted higher Mullen and lower tear of the laboratory beater treated stock is again present, excepting at the lower end of the tear curve wherein the presence of recirculated fines from the machine white water resulted in lower tear values.

It is well known that certain materials, such as starch, when added to a stock furnish serve to increase the Mullen strength of a specialty sheet. Note that the material added resulted in a faster developing Mullen with a lower tear throughout the machine system and a lower freeness of the final samples taken from the machine headbox.

Conclusion

With the increased reliance of the operating departments on the mill technical service to supply them with test results which can be correlated with actual operational experience, the importance of a thorough study of the effect of operating variables on fiber treatment through a stick preparation unit can hardly be over emphasized. Those performing the tests should be familiar with the cause and effect of changes noted in their results, and their data should be presented in conjunction with related operating details and correlated with finished sheet characteristics so that the men responsible for the efficient operation of stock preparation units can control fiber treatment within a range designated by the grade requirements.

Variations in the type of fiber produced from the several species of wood now being pulped or from differences in pulping procedure while endeavoring to satisfy varied grade requirements, need not transcend a modern laboratory's scope or facilities available to evaluate such pulps' performance in stick refining units. A testing and statistical program pursued with patience, flexibility, and imagination will surely assist in solving many refining problems.

Wilber Joins Southland; Crossett Promotions

James Hair, who served as plant engineer for the paper division of Crossett Industries, Crossett, Ark., has been named production manager to succeed Roland Wilber, who resigned to join Southland Paper Corp.

Carl Plumlee, assistant paper mill superintendent at Crossett, was named superintendent to succeed the late E. A. Newman, who succumbed to an illness of long standing.

First Meeting of West Canada Group

A. E. Cadman, secretary-manager of the Canadian Pulp and Paper Association, and Douglas Jones, secretary-engineer of the association's technical section, of Montreal, attended the first general meeting of the recently organized western branch of the association at Vancouver, B. C., Oct. 11.

R. C. Bledsoe of Powell River Co., temporary chairman of the branch, presided. The secretary is D. G. Stenstrom.

Bledsoe First Chairman

Dick Bledsoe, sulfite superintendent, Powell River Co., was elected the first chairman of the new Pacific Branch of the Canadian Technical Section at the Vancouver meeting.

John Ashby, technical director, Westminster Paper Co., was elected vice chairman and Miss Marguerite Hogan, secretary to Mr. Stenstrom, was elected secretary-treasurer.

Dow to Announce A New Product

The Dow Chemical Company of Midland, Mich., will be among major exhibitors at the 11th Annual Paint Industry show, Claridge hotel, Atlantic City, N. J., Nov. 4th to 6th. The booth will be designed largely around a new product which will be announced at that time.

Bright and Dark Side of Paper Picture—Tinker Tells Printers

E. W. "Ted" Tinker, executive secretary of the American Paper & Pulp Association, told 500 delegates at the recent Printing Industry of America convention in Atlantic City that if decontrol is allowed by OPA "all paper production records will be broken by an amazing output and supply and demand will quickly balance."

Otherwise, he saw a probability of complete cutting off of pulp from Sweden for the rest of this year, with mill inventories reduced to dangerous levels.

"Mill consumers of market pulp will have serious problems of readjustment," he said. But with ample supply, he thought paper production could reach 20,000,000 tons annually by Jan. 1. Printing paper production has risen from the rate of 2,000,000 tons annually in 1945's 3rd quarter to 2,700,000 tons annually in 1946's 2nd quarter, he said.

The printers' convention was devoted largely to wage increase demands of up to 100% by the Typographical Union and shortages of paper, ink, lead, etc.

Terry Defieux Is A Busy Man at Camas

Osmund "Terry" Defieux, Britain-born plant engineer of the big Camas, Wash., mill of Crown Zellerbach Corp., took a well-deserved vacation in Canada with Mrs. Defieux recently, after getting the huge expansion program at the Camas mill well along in the initial stages.

Foundation work and other work on the kraft mill extension, new kraft bleach plant, new kraft screen room, new steam plant extension and accommodation for two new paper machines—this mill's No. 14 and 15—were all simultaneously progressing.

Mr. Defieux's tasks in this regard have been so heavy that he was forced regretfully to resign for this year from the Camas Paper School faculty.

National Recognition Accorded Robertson Co.

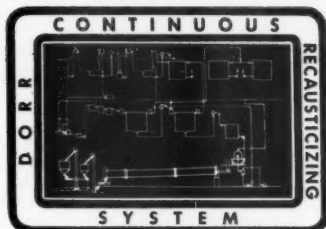
William F. Patterson, national director of Apprentice-Training Service, U. S. Department of Labor, declares that he believes the apprenticeship training program formulated and adopted by the Robertson Paper Box Co., Montville, Conn., in cooperation with the Norwich (Conn.) Paper Box Workers Union No. 494, Printing Pressmen and Assistant's Union of North America and the Montville Local No. 512, Brotherhood of Paper Makers, to be the first complete program of its kind in the nation.

It has been a long standing policy of the Robertson company to train its own craftsmen in printing and papermaking trades. The present program is the result of several years of study and missionary work on the part of the company's supervisors in order to develop a systematic program for training new employees. Immediately following the war when it became apparent that a large number of the company's veterans would be interested in an "on-the-job-training" program under the G. I. Bill, the company immediately proceeded to draft a training schedule. A joint apprenticeship committee was organized with the unions. The program was then put into effect.

Savings Effectuated for Chemical Products

The Sonoco Products Co., Hartsville, N. C., is having a new chemical laboratory building erected. Also being installed are three 10,000 gallon tanks for storing alcohol, phenol, and formaldehyde used in the chemical manufacturing process.

Facilities will enable the company to make purchases in tank car lots, with capacity to empty a tank car in 8 hours. Savings effectuated will pay for the improvements.



When a **DORR RECAUSTICIZING SYSTEM** goes in—

You are all set for

The Dorr Continuous-Recausticizing System is the heart of a pulp mill's chemical reclaiming department, because it assures the following results which are basic ones in the overall production picture.

- ① **A Uniformly Strong and Clear White Liquor**
This makes it easier to control and to operate the digesters — results in the more uniform production of a pulp with the desired qualities.
- ② **A Uniformly Well-Washed Lime Mud**
This improves filter and kiln operation — increases soda recovery — greatly lengthens the life of kiln linings.
- ③ **Uniformly Well-Washed Green Liquor Dregs**
This reduces the soda lost in the dregs to a negligible amount.

These three advantages are engineered into the Dorr System by employing improved methods of continuous slaking and causticizing — by providing adequately-sized thickeners — by giving the lime mud two (2) decantation washings before filtering and burning and the dregs four (4) stages of washing before discarding.

These elements of the Dorr System distinguish it from other systems, offered on "a just as good" basis.

When you think of the Dorr System, think of it in terms of:

**Better Pulp Quality • Better Filter and Kiln Operation
Longer Life of Kiln Lining • Negligible Soda Loss**

The Dorr recausticizing experts, who handled the installations at the right, stand ready to study your setup — to give you the benefit of an experience that is paying off at 9 out of every 10 new recausticizing systems built since January 1, 1944.

BETTER

Pulp Quality

BETTER

**Kiln and Filter
Operation**

LONGER

Life of Kiln Lining

NEGLIGIBLE

Loss of Soda

SOME RECENT DORR RECAUSTICIZING INSTALLATIONS

1944

Brompton Paper Co.—Ontario
Marathon Paper Co.—Ontario
Brown Corporation—Quebec
Kalamazoo Vegetable Parchment Co.—
Ontario

1945

Hummel-Ross Fibre Corp.—Virginia
Pacific Mills—British Columbia
Bloodell, Stewart & Welch—British Columbia
Consolidated Paper Co.—Quebec
North Carolina Pulp Co.—North Carolina
National Container Co.—Florida

1946

Alabama Pulp & Paper Co.—Florida
Gulf States Pulp Co.—Alabama
Hudson Pulp & Paper Co.—Florida
Crown-Zellerbach—Washington
Southern Paper Board Corp.—Georgia
Weyerhaeuser Timber Co.—Washington

1742



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November 1946

PULP & PAPER INDUSTRY

57

Newsprint is \$160 a Ton in B. A.

Canadian newsprint mills are being offered fabulous prices for their product in countries where ceilings don't count, but they are unable to accept the business because of the enormous demand from their regular customers in the United States and Canada.

Some companies with U. S. contracts coming up for renewal may think twice before they sign, however, if tempting offers from South America and other countries persist. In Buenos Aires newsprint costs \$160 a ton. There have been sales as high as \$200. Some publishers are reported ready to bid \$300 for early delivery.

Pulpwood Prices

Pulpwood exporters welcomed the announcement that OPA would let pulpwood of Canadian origin sold in the United States be billed on an adjustable price basis, as had previously been done with newsprint and woodpulp sales.

Affected by this is about 15% of Canadian pulpwood production, nearly all in eastern provinces, as exports from British Columbia have been sharply reduced. Production in eastern Canada is estimated at 9,500,000 cords yearly, 1,500,000 being exported to the U. S.

Wood Pulp Prices

The September increase in the price ceiling on woodpulp prices by OPA by 10% was the minimum expected by the industry in Canada.

At present, exports from Canada to the U. S. are understood to be running at about the same level as last year, or about 1,100,000 tons.

In making the announcement OPA made reference to the re-establishment of dollar parity between the two countries but did not mention rising costs of production as it did in connection with the rise in the U. S. domestic field, the Canadians point out.

Suggestions Used At Powell River Co.

Powell River Co. has received 1200 suggestions from employees and 148 of the suggestions have been adopted and put into effect.

Among the recent recipients of \$50 awards for suggestions were A. Jackson, who proposed introduction of an I-beam for the convenience of changing gears on a newsprint machine and H. L. Harper, who offered an improved method of attaching U-bars and channel rings in the drum barkers.

Celotex Purchases El Rey Roofing Plant on Coast

The Celotex Corp. has acquired, for an amount in excess of \$1,300,000, 5,000 shares (83%) of common stock of the El Rey Products Co., Inc., a roofing plant and felt mill at Los Angeles, Calif.

Reopens Quebec Mill

Consolidated Paper Corp. is re-opening its Cap Madelaine newsprint mill, Quebec, formerly operated as St. Maurice Valley Paper Co. The mill has been idle for several years, and it will be equipped with new grinders. Three news machines were rebuilt in 1942.

To Increase Imports of Canadian Newsprint

The United Kingdom will import about 150,000 long tons of newsprint from Canada and Newfoundland next year and by 1950 hopes to increase that total to from 300,000 to 350,000 tons, according to Sir Walter Layton, chairman of the British Newsprint Supply Committee's rationing committee, said in Montreal recently.

Sir Walter conferred with leaders in the newsprint industry in Montreal, Quebec and Ottawa, and he said that while he didn't get all he asked for he was satisfied.

When lease lend was effective Britain had contracts with North American producers for nearly 200,000 tons annually but because of lack of foreign exchange when lend-lease ended the order was cut to about 50,000 tons in 1946.

The target Sir Walter is shooting at for 1950 is in line with a program to increase size of British dailies from the present five page daily average to a 12-page average paper.

Newsprint—\$84 a Ton

On Oct. 11 the OPA again raised the ceiling price on newsprint in the U. S. It was boosted \$10 to \$84 a ton. This was the fifth boost under the OPA regime from the \$50 price which prevailed in 1942. The price was \$79.40 in 1919, going up from \$41.78 in 1915.

The Philadelphia Record has recently printed its editions on kraft paper, which it said cost \$95 a ton.



JOHN P. ROCHE has been named Vice President and General Manager of Sales, of Heppenstall Co., Pittsburgh, Bridgeport and Detroit, effective Oct. 16. In making announcement, R. B. Heppenstall, President, revealed that Mr. Roche will also become a Director of the company. Mr. Roche comes to Heppenstall from Oliver Iron and Steel Corp., Pittsburgh, where he was Secretary and Assistant to the President. A native of Pittsburgh, he was graduated from Duquesne University and Pittsburgh Law School.

Paul D. Close Joins Simpson Board Mill Staff

Paul D. Close, formerly technical secretary of the Insulation Board Institute, Chicago, has become associated with the Simpson Logging Co., Seattle, Wash.

Mr. Close will be identified with the manufacture and sale of the new Simpson insulating board and acoustical tile which will be made at the Simpson plant at Shelton, Wash. Production will start in the near future.

Mr. Close has been identified for many years with the insulation and building material fields. In addition to the Insulation Board Institute with which he was affiliated for seven years, he was formerly associated with Celotex Corp. and Johns-Manville.

Mr. Close was technical secretary of the American Society of Heating and Ventilating Engineers in New York and is author of a book, "Building Insulation" and various papers on insulation and heating.

Maps New Program

That pulp and paper management, as well as industry foresters and loggers, are going to take a hand in the forming U. S. forestry policy was evident at the American Forest Congress, third of its kind since 1882, held Oct. 9-10-11 at the Chamber of Commerce Building, Washington, D. C.

Many leaders affiliated with forestry and allied committees of AP&PA gathered in Washington in advance of the meetings, and some stayed for sessions on forest research, multiple use of forests, and timber management, it was noted by staff members of PULP & PAPER INDUSTRY in Washington for the Congress.

Purpose of the open forum sessions was to bring together leaders in industry, labor, conservation movements and state and federal agencies. Out of the meeting will grow, it is hoped by the American Forestry Association, "speedy action in bringing forest lands into full productivity."

New Saginaw, Mich., Paper Package Firm

A new Saginaw, Mich., industry is Arrow Paper Products Co., 920 North Hamilton, which manufactures spirally-wound paper tubing, which officials expect will have a wide market throughout the automotive industry for use as shipping protectors for materials and parts.

William D. P. Dooley, vice president of the new concern, said it now has contracts with Buick Motor Car Co. and Sugar Beet Products Co.

Other officers are Dr. Edwin D. MacKinnon, president, and Samuel Lenick, secretary-treasurer.

Consolidated of Canada Announces Refunding

Consolidated Paper Corp., Montreal, stepped into line with other Canadian companies which have capitalized on dollar parity by announcing plans to refund \$41 millions of 5½% U. S. option pay debt by an issue of \$35 million of 3½% 20-year bonds, with the balance of \$6 millions being provided out of working capital.

The refunding will reduce annual interest charges from \$2,271,741 to \$1,225,600.

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These tests also prove the ease of application of 455 Calendar Gum . . . prove that it assures freedom from foaming, picking and sticking.

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Test it yourself to prove its stability and superiority as a surface sizing agent. Our technicians will be glad to assist you in any tests you make. Write us for full information.

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TORONTO, CANADA

HALL

NEW YORK 17, N. Y.
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NEW YORK, CHARLOTTE, N. C.,
PROVIDENCE, R. I., CHICAGO

Hercules Host To Delaware TAPPI

First regular meeting of the Delaware Valley section of TAPPI was held Oct. 11 at the Hercules Country Club, Wilmington, Del., and about 130 were in attendance. The Hercules Powder Co. invited members to enjoy the facilities of its country club for the day, and tours through the Hercules Powder Experiment Station took place in the mid-afternoon. The meeting was held in the evening following dinner.

The speaker was Robert T. Sheen, consulting chemical engineer of Philadelphia, who talked on "White Water—an Industrial Waste Disposal Problem." The next Delaware Valley meeting will be held Nov. 1 at the regular meeting place, the Engineers' Club in Philadelphia. C. G. Weber, acting chief of the Paper Section of the National Bureau of Standards, will talk on aspects of paper-making in Japan.

New Appointments In Victoria Companies

R. W. Mayhew, president of Sidney Roofing & Paper Co., Victoria, B. C., announces that R. Logan Mayhew, formerly managing director of the company and its subsidiaries, National Paper Box, Ltd., Vancouver, B. C., and Fibrelock Insulation, Ltd., Victoria, has been appointed vice president and managing director of these companies.

A. Welch, formerly secretary-treasurer, has been appointed general manager while continuing in his former capacity and assisting Logan Mayhew in general overall management.

P. W. Field, for many years manager of the Vancouver branch and a director, has been appointed general sales manager, in charge of all sales, domestic and export, with offices in Victoria. A. J. Saunders, formerly general superintendent, has been appointed technical director.

M. & O. Employs 1,484 Returned Vets

Ontario Paper Co. by October, had employed 1,484 returned veterans in its U. S. and Canadian mills and Minneapolis offices. Service flags show 1,277 left for service. There are 48 gold stars in the flag.

More Power To Powell River

Powell River Co. has awarded another contract in connection with the expansion of its hydro-electric facilities on the Lois River, British Columbia, where, as previously reported, a second generating unit is scheduled for completion in 1947.

This unit will double the installed capacity of the Lois River system, bringing its output to 34,000 horsepower, roughly 40% of total requirements of the mills.

The company has two sources of hydro power, the Powell River site, adjacent to the mills, having been developed to full capacity some years ago.

Dixie Cup to Expand

The Dixie Cup Co., of which Cecil Dawson, Chicago, is executive vice-president, will build a \$500,000 plant in Fort Smith, Ark. The plant will have 110,000 square feet of floor space and employ 1000. Other plants are in Easton, Pa., Chicago, Darlington, S. C., and Toronto, Canada.

Nugent Heads Supts. Northwestern Division

L. A. Nugent, of Nekoosa-Edwards Paper Co., Port Edwards, Wis., is the new chairman for 1946-47 of the Northwestern division of the Superintendents Association.

Sigge Ekman of Rhineland Paper Co. is first vice chairman; F. X. Kreiling of Thilmany Pulp & Paper Co. is second v. p., and L. S. Sabatke of Marathon Corp. is secretary-treasurer.

Flintkote Finds Fire Control Pays Dividends

Inauguration of a company-operated fire control system in its 100,000 acres of forest land four years ago has paid dividends in that there is now a good stand of pine seedlings 7 to 8 feet high where not much stood before, according to Glenn Ball, plant manager, The Flintkote Co., Meridian, Miss.

The company operates two master two-way radio equipped trucks.

The company's program came from a decision not to depend too much on state and Federal fire control. A 24-hour crew is kept on fire call, and these men cruise and mark timber for cutting.

Back From Europe

John H. Martin, general production manager of Sonoco Products Co., Hartsville, S. C., returned recently from a tour of Europe as a scientific consultant attached to the Technical Industrial Intelligence Branch. Mr. Martin made a close study of the German cone and tube industry.

"School" for Forestry Vets Is Success at Crossett

Successful staging of a post-war "management conference" held the Crossett (Ark.) National Forest for returned forester veterans to enable them to catch up on forest progress during the war years has provided an encouraging basis for similar conferences in other sections of the South. The conference, held Sept. 9-13, was limited to foresters in Louisiana, Arkansas and Oklahoma. Crossett and International (Southern Kraft) paper mill woodsmen participated, among others.

The idea of a "management conference" to bring GI-foresters back into practical contact with advancements in their field originated with Chas. A. Connaughton, director, Southern Forest Experiment Station. It found quick endorsement from industry owners.

Gulf Paper Co. Is Incorporated

Incorporation papers were taken out in Florida for the Gulf Paper Co., Inc., with authority to manufacture paper. Authorized capital stock set was for \$25,000 in \$1.00 par value each shares.

Incorporators include A. D. Pace, of Pensacola, Fla., executive vice-president and treasurer of Florida Pulp & Paper Co., until its acquisition by St. Regis, Ashley D. Pace, Jr., and John D. Sniders.

Plan Glassine Conversion

W. E. Robeson, Jr., Sonoco Products Co., Hartsville, S. C., has been assigned to that company's Rockingham, N. C., plant for work in connection with plans for installation of glassine converting equipment.

Beauchamp on Coast For Calco's Pigments

Leo Sklarz, sales manager, pigment department, Calco Chemical Division, American Cyanamid Co. announces appointment of Wendell G. Beauchamp as Pacific Coast regional sales manager of the pigment department.

Mr. Beauchamp was with United Color & Pigment Co., from 1937 to 1944, when he joined American Cyanamid Co., after its purchase of United Color.

Only 50,000 Tons Bleached So Far From Europe

Wood pulp imported from Scandinavia from January 4 through Sept. 26 totaled only 442,478 short tons, far below government predictions early in the year. Of this total, 369,219 tons were imported from Sweden as against 71,861 tons from Finland and 1,398 tons from Denmark. Of the total, only 50,051 were bleached grades (35,220 tons bleached sulfite and 14,831 bleached kraft).

Wieman Manager

George C. Wieman has been named manager of the Los Angeles division of Western Waxed Paper Co., succeeding W. A. Voltz, recently retired.

Voltz Retires

Walter A. Voltz, for 23 years manager of Western Waxed Paper Co., Los Angeles, retired Sept. 30. He was succeeded by George C. Wieman, who stepped up from the position he has held as assistant manager.



Plans for Burning Sulfite Liquor Indefinite

Although Bowater's Newfoundland Pulp & Paper Mills at Corner Brook, Nfld., is making provision in three new Foster-Wheeler boilers for burning and possible recovery of waste sulphite liquor, its plans in this direction are as yet very indefinite. The only firm decision that has been made is to have the furnaces of the new boilers designed with a large enough volume to handle the liquor when a recovery system is installed.

Details of the recovery system are now being discussed in general terms, but they are at such an early stage that no firm statement can be made at present. All aspects of the problem, and the various systems of recovery now current, are being studied in detail, and it is likely to be several months before these studies are complete.

"Score" Club for Champion Employees

Organization of a "Score Club" for employees of Champion Paper & Fibre Co. who have been with the company for from 20 to 25 years was effected in September at the Canton, N. C., mill. There were 376 men and women qualified. Officers are: Elsa Wehr, president; McKinley Powell, vice-president; and Kenneth Jackson secretary. The "score" Club fits in just before the "old timers" Club, composed of employees of a quarter-century or longer.

Alva Powell, Sr., night superintendent of No. 2 mill, is president of the Old Timers Club. He has completed 38 years with Champion.

Changes at Powell River

S. A. Quist, Montreal, has joined Powell River Co. as process engineer.

Ambrose McKinnon, with Powell River since 1922, has been appointed shift supervisor. A similar position is held by Frank Dickson in the sulfite department.

Contracts For Output of Mill for Ten Years

Entire output of Bowater's Newfoundland Pulp and Paper Mills, Ltd., at Corner Brook, Nfld., has been contracted for ten years ahead, according to Sir Eric Bowater, president of the company, who came over from England late in September to inspect the big mill now in the course of expansion, as described in the September issue of PULP AND PAPER INDUSTRY.

A sixth high speed newsprint machine is being installed to operate at a record 1,750 feet a minute, producing a sheet of 266 inches trim width.

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EMPLOYERS SEEKING EXECUTIVES AND
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Mead's New Mill Enlists Farmer Aid

Distribution of 500,000 pine seedlings is to be effected to farmers in 20 counties around Macon, Ga., by the Macon Kraft Corp., subsidiary of Mead Corp., which is building a \$12,000,000 container board plant there.

The plant will have capacity of 1000 cords of wood per day, according to Herbert A. Kidd, manager. Operation will begin in the summer of 1947.

Haner Builds Cruiser

Vic Haner, plant engineer of Puget Sound Pulp & Timber Co., is owner of a sleek, 26-foot cruiser, named "Gertie." Vic has a more than usual interest in the boat as he did considerable of the building himself.

He was assisted by Howard Dixon, relief foreman of the sulfite mill.

Aids for Personnel Directors in Placing Vets

A U. S. War Department release suggests that pulp and paper mills make use to the fullest extent of Form 100, the separation qualification record, given each service man and woman upon discharge from the armed services. Declared of great help to those concerned with the problem of placing returning veterans in civilian jobs is the publication entitled "Special Aids for Placing Military Personnel in Civilian Jobs," which can be obtained from the superintendent of documents, Government Printing Office, 45 G Street N. W., Washington 25, D. C., for \$1. (Make checks payable to him.)

School's 14th Year

Crown Willamette Paper School, the educational division of Crown Zellerbach Corp. which is conducted at Camas, Wash., will start its 14th year of activity on Oct. 22. A. G. Natwick, assistant resident manager at the mill, is again serving as dean.

Interest Coupons Paid

British Columbia Pulp & Paper Co. has paid in Canadian funds the interest coupons numbered 34 to 39 inclusive on its 7 per cent general mortgage bonds.

This represents interest originally to fall due November 1, 1942, and on May 1 and November 1, 1943 and 1944, and May, 1945. They were postponed in accordance with the resolution of holders.

Interest due November 1, 1945, was paid at the same time. This was coupon 40. On back coupons interest was to be paid at 7 per cent on face amount of each coupon from respective maturity date to November 1, 1945.

At the end of 1944, the amount of back interest payable was \$344,222. The official announcement says that payment was to be made as follows: On each \$1000 bond, \$277.40; on each \$500 bond, \$137.37, and on each \$100 bond, \$27.05.

The company has substantially improved its balance sheet position during the past few years. A balance sheet deficit of \$343,006 as at the end of 1942 was converted into a surplus as at December 31, 1944, of \$623,246, in addition to which there were reserves of \$625,161 at the end of last year. Net working capital shown at \$1,655,632 on the 1942 balance sheet was indicated at \$2,233,627 at the end of 1944.



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Complete stainless steel (Type 316) cylinder mould photographed just before cover was put on.

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Shafts, spiders, rods, winding wire, covers—complete cylinder moulds are being made by Cheney Bigelow from Stainless Steel, Type 316 (KA2SMO), for use in thickening, washing or paper making. They can be made with either round rod and round wire, or Cheney Bigelow's own patented triangular rod and high winding wire construction for increased drainage and more rigid surface construction.

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PULP & PAPER INDUSTRY

62

Found! One Home For APPA Executive

William D. Staples, assistant executive secretary of AP&PA, 122 East 42nd St., New York, has performed a major miracle. After months of search, dating from the time he was honorably discharged from the Army and attached to the Association, he has found and purchased a house, on Long Island.

Movies of Chain Barker Interest Mill Men

In Everett and Longview, Wash., movies have been shown to pulp and paper industry men of the new Swedish chain smallwood barker, which will be used for the first time on this continent in Wisconsin.

Mill men who saw the movie thought the barker especially useful for poles and long small wood of irregular shape. The log goes through two discs and is barked by friction of four chains crossing diametrically through the discs. Representatives of American Defibrator, Inc., said 15 cords are barked in an hour, requiring only 25 hp. drive.

Fletcher Paper Co. Increases Benefits

Fletcher Paper Co. of Alpena, Mich., has increased hospitalization benefits for employes and dependents without additional cost to personnel, T. G. Fletcher, vice president, announces.

Employes and dependents will receive up to \$150 and \$112.50, respectively, for surgical operations and \$6 a day when hospitalized. Also included is visiting nurse care.

Big Mead Plant Now Century Old

The Mead Corp. and its plant at Chillicothe, Ohio, are 100 years old, and the anniversary has been celebrated in a big way in the Ohio city.

The Chillicothe Gazette issued a special edition in connection with the 100th anniversary of the paper company, in which it showed the quaint old office of the company erected in 1846, accompanied by a photograph of the company's 63-acre site at present, which is one of the largest industries of the kind in the country.

British Columbia Facts and Figures

Value of pulp and paper produced in British Columbia in 1945 set a new record at \$33,782,000, compared with \$30,391,000 in 1944, highest previous mark. The ten-year average value was \$22,734,000.

A total of 253,671 tons of newsprint was produced in 1945, compared with 236,696 tons in 1944. The ten-year average was 242,959 tons.

Volume of other papers was 80,691 tons in 1945, compared with 74,038 tons in 1944 and a ten-year average of 62,124 tons.

In addition to 310,575 tons of pulp manufactured into paper in British Columbia, 171,839 tons were shipped out of the province during the year.

Of pulp species cut last year, there were 643,238,149 bd. ft. of hemlock, 165,984,229 bd. ft. of balsam, 27,375,115 bd. ft. of lodgepole pine and 310,195,487 bd. ft. of spruce. A large proportion of the spruce and hemlock was for saw logs.

November 1946